



AIC 2014 INTERIM MEETING

TERCER ENCUENTRO MEXICANO DEL COLOR

*Color, culture and identity:
past, present and future*
Color, cultura e identidad:
pasado, presente y futuro

October 21-24, 2014
Oaxaca, México

BOOK OF ABSTRACTS (MEMORIAS)

Editors

Dra. Georgina Ortiz Hernández

AMEXINC

Dr. Rodrigo Ramírez Ramírez

UAM - AZCAPOTZALCO

GRUPO DE INVESTIGACIÓN DEL COLOR



Universidad
Autónoma
Metropolitana
Casa abierta al tiempo Azcapotzalco



gicolor
medioambiente



Executive Committee

Javier Romero, President
Berit Bergström, Past President
Nick Harkness, Vice President
Tien-Rein Lee, Secretary/Treasurer
Jin-Sook Lee
Maria João Durão
Nancy Kwallek
Gabriela Nirino

AIC Regular Members

Argentina	GRUPO ARGENTINO DEL COLOR
Australia	COLOUR SOCIETY OF AUSTRALIA
Brazil	ASSOCIAÇÃO PRÓ-COR DO BRASIL
Bulgaria	COLOUR GROUP – BULGARIA
Canada	COLOUR RESEARCH SOCIETY OF CANADA
Chile	ASOCIACIÓN CHILENA DEL COLOR
China	COLOR ASSOCIATION OF CHINA
Finland	COMITÉ ESPAÑOL DEL COLOR
France	CENTRE FRANÇAIS DE LA COULEUR
Germany	DEUTSCHER VERBAND FARBE
Great Britain	THE COLOUR GROUP
Hungary	HUNGARIAN NATIONAL COLOUR COMMITTEE
Italy	GRUPPO DEL COLORE - ASSOCIAZIONE ITALIANA COLORE
Japan	COLOR SCIENCE ASSOCIATION OF JAPAN
Korea	KOREAN SOCIETY OF COLOR STUDIES
Mexico	ASOCIACIÓN MEXICANA DE INVESTIGADORES DEL COLOR
Netherlands	NEDERLANDSE VERENIGING VOOR KLEURENSTUDIE
Poland	GLÓWNY URZĄD MIAR
Portugal	ASSOCIAÇÃO PORTUGUESA DA COR
Slovenia	DRUSTVO KOLORISTOV SLOVENIJE
South Africa	COLOUR GROUP OF SOUTH AFRICA
Spain	SUOMEN VÄRIYHDISTYS SVY RY
Sweden	STIFTELSEN SVENSKT FÄRGCENTRUM
Switzerland	PRO/COLORE
Taiwan	COLOR ASSOCIATION OF TAIWAN
Thailand	THE COLOR GROUP OF THAILAND
United States	INTER-SOCIETY COLOR COUNCIL

AIC Associate Members

North America	INTERNATIONAL ASSOCIATION OF COLOR CONSULTANTS/DESIGNERS
USA	COLOUR MARKETING GROUP



Asociación Mexicana de Investigadores del Color, A.C.

Carlos I. Aguirre Vélez
Presidente

Alfonso de Lucas Tron
Vice-presidente

Fausto Enrique Aguirre Escárcega
Ángela Alba Escudero
Gabriela Arroyo Figueroa
Leticia Arroyo Ortiz
Matilde Breña Sánchez
Anne Marie Brugman
Marcela Burgos Vargas
Jazmín Carranza Gallardo
Ilián Castañeda Vázquez
Pedro Ramón Cervantes Petersen
Mónica Cuvelier García
Gabriel de la Cruz Flores Zamora
José Antonio Gallardo Frade
Priscila Harfucsh
Alma Olivia León Valle
Liliana Monroy Mendoza
Mauricio Moysén Chávez
Georgina Ortiz Hernández
María Teresa del Pando
Lilia Roselia Prado León
Elizabeth Ramírez Pérez
Rodrigo Ramírez Ramírez
Nallely Rangel Vázquez
Ignacio Javier del Río y Dueñas
Sara Ruiz Vallejo
Bibiana Solórzano Palomares
Aliona Starostenko Sokolov
Carlos Trillas Salazar
María Victoria Valenzuela López
Iris Vergara Ortiz



UNIVERSIDAD AUTÓNOMA METROPOLITANA

Dr. Salvador Vega y León
Rector General

Mtro. Norberto Manjarrez Alvarez
Secretario General

Dr. Romualdo López Zárate
Rector - Unidad Azcapotzalco

M. en C.I. Abelardo González Aragón
Secretario de la Unidad Azcapotzalco

Dr. Aníbal Figueroa Castrejón
Director de la División de Ciencias y Artes para el Diseño

Mtro. Héctor Valerdi Madrigal
Secretario Académico de CYAD

Mtra. Verónica Huerta Velázquez
Jefa del Departamento del Medio Ambiente

Dr. Rodrigo Ramírez Ramírez
Responsable del Grupo de Investigación del Color
Coordinación y diseño de la publicación

AIC 2014 Chairs' Foreword

Dear participants, on behalf of the Asociación Mexicana de Investigadores del Color A.C. (AMEXINC) I give you a warm welcome to this AIC2014 Interim Meeting in Oaxaca, México.

When Oaxaca was designated as the 2014 venue, it represented a huge commitment for the AMEXINC because it is a challenge to organize such an important international event and, especially to meet the standards of previous years in the different cities it has happened.

This time the main theme that brings us together is the color and culture and their past, present and future perspectives. Talking about culture is a broad term that encompasses many areas of knowledge and life and therefore in the call for papers we only mentioned some possible lines that could bring together the different subjects that can be related.

The participation has been generous and diverse. People of over 30 countries decided to send their abstracts and come to Mexico to share how colors are used in their countries. The keynote speakers are friends and regular attendees of the AIC that, with their presentations, will give highlights to this encounter of people that are passionate for color. The workshops offer is very attractive to learn more about the uses of color. And in general, the academic program anticipates a great intellectual feast, so we anticipate that this conference will be very interesting.

It is for us a motif of proud that people from all over the world come to Mexico and, besides sharing their knowledge and experiences about color, they visit the beautiful city of Oaxaca, characterized for their colors and traditions. We have also prepared several complementary cultural activities that try to show a little bit of the traditions and folklore of this region.

We sincerely hope that this event will be very useful for all the participants and that you feel comfortable in this city of kind people and unique beauty. It is our wish that when you return to your places of origin, you take your experience in Oaxaca both in your memory and in your heart.

"Por una cultura de la experiencia cromática"
Dr. Carlos I. Aguirre Vélez
Chairman AIC2014

HORA	TUESDAY 21 MARTES	WEDNESDAY 22 MIÉRCOLES	THURSDAY 23 JUEVES	FRIDAY 24 VIERNES	25	
8:00 a 9:00	REGISTRATION / REGISTRO (conference, workshops, gala, tour)					
9:00 a 10:00	<p style="text-align: center;">AIC EC MEETING</p> <hr/> <p style="text-align: center;">WORKSHOPS / TALLERES</p>	Opening Ceremony Ceremonia de Inauguración	Keynote 3 Magistral Dr. Lindsay MacDonald	Keynote 5 Magistral Dr. Albert Vanel	TOUR TO MITLA / EXCURSIÓN A MITLA	
10:00 a 11:15		Keynote 1 Magistral Dr. José Luis Caivano	Sede 1 - Impacto del color en las personas Sede 2 - Iluminación y color	Sede 1 Diseño y cultura Sede 2 Iluminación II		22 23
11:15 a 11:30		Coffee break, posters exhibit Café con ponentes y visita posters	Coffee break, posters exhibit Café con ponentes y visita posters	Coffee break, posters exhibit Café con ponentes y visita posters		
11:30 a 12:45		Sede 1 Significados Tradicionales Sede 2 - Elementos colorimétricos aplicados	Sede 1 Usos de los significados Sede 2 Textiles	Sede 1 Moda y Luz Sede 2 Significados Tradicionales II		24 25
12:45 a 14:00		Sede 1 Color y Tradición Sede 2 Color en las ciudades	Sede 1 - Impacto del color en las personas II Sede 2 Lenguaje del color	Keynote 6 Magistral Dr. Georges Roque		
14:00 a 15:30		MEAL / COMIDA	MEAL / COMIDA	MEAL / COMIDA		MEAL / COMIDA
15:30 a 16:45		Sede 1 Pigmentos Sede 2 - Color y Teoría en la Arquitectura	Sede 1 - Arte y ámbito contemporáneo Sede 2 - Diseño de espacios urbanos	Sede 1 Color en las ciudades II		26
16:45 a 18:00		Sede 1 - Significados del color y del lenguaje Sede 2 Percepción y color	Sede 1 - Procesos básicos II Sede 2 - Elementos colorimétricos aplicados II	Keynote 7 Magistral Dr. Georgina Ortiz		
18:15 a 19:15		Coffee break / Café con ponentes	Coffee break / Café con ponentes	Closing Ceremony Ceremonia de Clausura		
19:30 a 20:30		ASAMBLEA EXTRAORDINARIA DE AMEXINC	Keynote 2 Magistral Dr. Renata Pompas	Keynote 4 Magistral Dr. Roy Berns		
21:00	Reception and Calenda Recepción y Calenda	Reception and Calenda Recepción y Calenda	Gala Dinner (21:00) Cena de Gala			

CONTENTS

Scientific Committee	8
Oral papers	9
Keynote speakers	10
Poster papers	117
Author Index	174



SCIENTIFIC COMMITTEE

Georgina Ortiz Hernández

Chair

AGUIRRE VÉLEZ, CARLOS I.
BARDIER, DARDO
BERNS, ROY
BURGOS VARGAS, MARCELA
CAIVANO, JOSE LUIS
CORDERO JAHR, ELISA
COX, MARÍA DE LA PAZ
CUVELIER GARCÍA, MÓNICA
DA POS, OSVALDO
DE LUCAS TRON, ALFONSO
DURAO, MARÍA JOAO
GALLARDO FRADE, JOSE LUIS
GREEN-ARMYTAGE, PAUL
HARKNESS, NICK
HIRSCHLER, ROBERT
KWALLEK, NANCY
LEE, JIN-SOOK
LOPEZ, MABEL
MELGOSA LA TORRE, MANUEL
MUSSO, MARÍA LUISA
NIRINO, GABRIELA
OKAJIMA, KATSUNORI
PORTILLO RODRÍGUEZ, MANUEL
PRADO LEÓN, LILIA ROSELIA
RAMÍREZ RAMÍREZ, RODRIGO
ROJAS, GILDA
ROMERO, JAVIER
ROQUE, GEORGES
SCHINDLER, VERENA M.
SOLÓRZANO PALOMARES, BIBIANA
TOMINAGA, SHOJI
VALLBERG, ARNE

ORAL PAPERS



KEYNOTE SPEAKERS

Dr. José Luis Caivano

Color and cesia as signs: Indexical use of color and cesia in nature and culture

Dr. Renata Pompas

Mexico and its colors - Beetween stereotype and gobalization

Dr. Lindsay MacDonald

Colour naming: Language and gender

Dr. Roy Berns

Van Gogh compliments

Dr. Albert Vanel

La couleur dans les cultures du monde

Dr. Georges Roque

Colour and symbolism

Dr. Georgina Ortiz Hernández

*The symbolic universe of color in Mexico.
From the prehispanic world to the present*

Session 1: Traditional color meanings

LANGUAGE AND MEANING OF MEXICA'S COLOUR

LEVALLE, Alejandra Eugenia
Instituto Universitario Nacional del Arte
Departamento de Artes Visuales
Argentina

ABSTRACT

It existed a strong pictorial tradition in Mesoamerica which included every culture aspect: palaces, temples, tombs, ceramics, sculptures and the sacred books (codices) received the aesthetic treatment of colour, being at the same time included as an essential element in the mythic narrative. However, about the choice of some colours to be put on different supports, or distinguish deities and the directions of the world, they didn't only respond to their aesthetic character. But they had an essential function in the ideological context connected with the cosmovision.

The mexica mythic thought, as well as its aesthetic production, give us an important material to approach the problematic of the colour in Mesoamerica. Because of this, in this work, by means of a corpus of mexicas sculptures and the pictographies of the codices, we try to investigate about the language and meaning of the mexica colour, articulating different levels of meaning: on the one hand, the religious thought to be represented through myths, on the other hand, the materialization of those concepts through the aesthetic production as a mean of symbolic communication, and at last, the final destiny of the objects connected with the ceremonial context through which they activate their sacred power to serve with the function they were created.

COLOR AND COSMOGONY OF PREHISPANIC CULTURES

MONROY Mendoza, Liliana Angélica
México

ABSTRACT

En todas las culturas humanas encontramos una tendencia a expresar el saber por medio de un lenguaje revestido de formas bellas, que constituye el color; y ésta tiene como preocupación fundamental la armonía de las formas expresadas, en tanto que busca explicar la esencia de las cosas por sus causas, además la búsqueda y sistematización de esos conocimientos.

El tesoro cultural del México Prehispánico, nos refleja su gran contenido de pensamiento y su cosmovisión, la encontramos en sus principales manifestaciones: Los códices indígenas que describen adecuadamente la sabiduría indígena en su expresión original; los códices mixtos elaborados en su mayoría por misioneros; los relatos, hechos narrados por testigos oculares de esta civilización; los poemas que con su lenguaje metafórico plasmaban la idea del hombre, del mundo y de dios; y las obras de arte que son imprescindibles para entender este pensamiento y que debemos conocer, reflexionar sobre las formas estéticas a las que llegaron principalmente a través de la pintura, escultura y arquitectura.

Yo como mexicana quiero, a través de este trabajo, dar conocer la riqueza de nuestra cultura prehispánica y por este medio busco realizar una guía que estimule, ayude a la comprensión y al amor de nuestro pueblo. El presente trabajo busca mostrar de manera breve una aproximación a la visión colorida de la cosmogonía de los grupos prehispánicos haciendo un recorrido en la cosmovisión de la vida de los toltecas, aztecas y mayas, a través de las representaciones, los dioses, los animales, los puntos cardinales y el color, como parte de los caminos de trascendencia.

Session 1: Traditional color meanings

STORIES OF BLUE IN RIO DE LA PLATA

NIRINO Larroquette, Gabriela

Textile Design. School of Architecture, Design and Urbanism.
University of Buenos Aires. Argentina

ABSTRACT

Blue is an emblematic color and has a deep meaning for Argentina. In this paper, we will try to begin to trace the path of the use of this color in the country, especially in textiles, since colonial times until today. During the colonial period, natural blue dyes used in blankets and "ponchos" were goods that embodied both the traditional wisdom of textilery crafted by indigenous peoples and African slaves, as well as the productive and commercial goals of the Spanish colonizers. Since the May Revolution (1810), the sky-blue became in national flag: an iconographic feature of the nation's incipient discourse.

The exact shade of that blue would be the subject of power struggles between different political groups. Blue is, also, throughout the ages, the color of the uniformed, whether military or academic. The color of uniformity, of the regulated. It is also used incessantly in blue-collar work clothes. To address the historical approach, bibliographic references, archived graphic material and heritage textiles will be used. From the symbolic and productive values detected, the way in which they are expressed, change or disappear in contemporary textiles will be analyzed. To accomplish this, guided observation and surveys about use preferences and valorative perception will be drawn.

COLOR IN NATIONAL IDENTITY SIGNS

RAMÍREZ Ramírez, Rodrigo

Color Research Group, Environment Department
Universidad Autónoma Metropolitana - Azcapotzalco, México

ABSTRACT

This research seeks to show the diversity of meanings that has been linked to the colors in the signs of national identity, specifically the flags. Such diversity, generated in different regions, cultures and times is a historical memory of the use of color by the different peoples of the world. The set of meanings provides a valuable reference against the widespread view that color meanings are universally valid in most cases, because, although sometimes the official statement is not originally bound to a popular sense, along its history does reflect at least a documented meaning assignation, that is not necessarily consistent in all cases with those of other regions, peoples and times.

The generality and uniqueness of the meanings that can be observed in the data obtained allow us to draw new lines of color research from the detection of the reasons that cause them, so this work is considered the beginning of a series of works regarding color and historiography that will be generated in the near future.

Since the official designation of the signs of identity implies the time factor, years of adoption are registered to add an additional component to the information gathered, allowing subsequent reviews to take into account the intrinsic validity of its meaning.

The results are displayed as a series of frequency graphs and semiological maps presented by region, and constitute a testimony of human diversity through color.

Session 1: Traditional color meanings

MEXICAN BASIC COLOR TERMS AND COLOR PREFERENCES

PRADO León, Lilia R.¹ y LILLO, Llover Julio A.²¹ Universidad de Guadalajara. Guadalajara, Jal. México² Universidad Complutense de Madrid

ABSTRACT

Three experiments analyzed Basic Color Terms (BCTs) and color preferences in Mexican speakers. The first two identified (which words are BCTs?) and colorimetrically delimited the Mexican BCTs (which part of CIE color spaces belong to each BCT? Which are the colorimetric characteristics of each Chromatic Category, CC, identified by a BCT?). The third experiment evaluated color preferences using (1) Munsell dimensions or, (2) Mexican BCTs. The first experiment used an elicited list procedure (** people with their eyes closed individually wrote a list with all the color terms they could remember). Only 11 terms appeared in more than fifty per cent of the lists, fulfilling the requisite to be considered BCTs. Thirty people participated in the second experiment. It included two different tasks, both performed using the same set of color transitions (they include two BCTs good representatives in their limits). Participants (1) named the colours at the limits (naming task) and (2) selected the colour corresponding to the boundary between the two CC presented (CC boundary delimitation task). Experiment 2 results showed high similarity between Mexican CCs and their equivalents in Castilian (the Spanish spoken in Spain) and English (American and British) English, however some relevant differences appeared. For example, Mexican and Spaniards used different BCTs (respectively, café or marrón) for naming the same CC (Brown, in English). *** people participated in the third experiment, where color preferences were evaluated (from 0 to 100). As expected, results analysis based on Munsell hue categories showed a strong blue-yellow dichotomy where dark yellows provided the worst results. On the other hand, analysis based on Mexican BCTs indicated, among other things, that there were no dark stimuli included in the yellow CC and consequently, no low "agrado" evaluation for this CC.

MANY COLORS WITH JUST TWO CHEMICAL COMPOUNDS

AGUIRRE-VÉLEZ Carlos I.
CICATA Legaria IPN, México

ABSTRACT

Industrial colorants and natural pigments are usually made of different chemical compounds, every color has a determinant formula. A new pigment was made with polymethyl methacrylate and carbon, two “ingredients” not common in colorant industry. With these two compounds, it is possible to get different colors. This surprising fact is based in several optical phenomena, mainly photonic crystal, not in selective absorption by electronic bonding of molecules. The new pigment, called “mate photonic pigment”, can save money in the fabrication of colorants and doesn't lose color. Mate photonic pigment has been patented by IMPI Mexico.

SENSITIVITY ESTIMATION OF DIGITAL CAMERAS USING DIFFERENT COLOR TARGETS

AMANI Tehran, Mohammad
MAHMOUDI Nahavandi, Alireza

Textile Engineering Department,
Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran

ABSTRACT

Spectral characterization of color imaging devices has many advantages over colorimetric characterization in terms of light source independency and metamerism. A common approach for sensitivity estimation is using some colorful patches. This method takes advantage of linear behavior of sensor and solves an over determined system of linear equations. However, training patches play important role in spectral characterization results.

3 different color targets Color Checker DC® , Color Checker SG® and Kodak IT8.7/2 (Q60®) have been studied to choose best candidate for spectral characterization of camera. Chart images were captured and were corrected in terms of light inhomogeneity, black offsets and nonlinearity. These images were analyzed to estimate spectral sensitivities of camera channels.

Results showed that, Color Checker DC® and Color Checker SG® charts have better performance in comparison to IT8.7/2 (Q60®) in sensitivity estimation, to the level that average of error of sensor value simulation from estimated sensitivities, decreases from 9% and 10% for Color Checker DC® and Color Checker SG® charts to 15% for IT8.7/2 (Q60®) chart. While IT8.7/2 (Q60®) chart comprised of printed patches and the spectral data of patches possess higher condition number, Color Checker DC® and Color Checker SG® chart composed of solid patches and show lower condition number. Printed targets, such as IT8.7/2 (Q60®), due to restriction of color primaries, produce spectrally dependent reflectances, while it is not the case for solid patch targets (Color Checker DC® and Color Checker SG®). These two factors (condition number and independency of reflectance of patches) play important role in better performance of Color Checker DC® and Color Checker SG® charts over IT8.7/2 (Q60®) chart.

DEVELOPMENT OF A MOBILE APPLICATION: A PERSONAL IMAGE SELF-DIAGNOSIS TOOL

Youngin KIM, Hyejeong HAHM, Hyerim HONG,
Yumie HONG, Gyeol KO
Yonsei University, Seoul, South Korea

ABSTRACT

Nowadays personal imageconsulting has become very important, and its demand has increased. However, image consulting services are not easy to access, so a handy image consulting tool is required. The purpose of this study is to develop a self-diagnosis tool by using an application for smart phones, and as a result, to increase convenience and accessibility in Personal Image Consulting. The results of this study areas follows; from collected data of a previous study on Personal Color Design System(PCDS), we were able to classify women skin color into 9 groups and women hair color into 7 groups; from the harmony of the 2 colors below, women's matching color results were divided into 4 types, which are star, sun, moon, and sunset type. These 4 types were once again divided into 3 detailed types depending on the tone of skin color: yellowish, pinkish, and whitish. To each final 12 types, we suggested 6 best matching colors. Then, because previously developed PCDS was a color diagnosis tool that were recommended and used by personal image making experts or image making experts only, we rearranged the personal color image diagnosis process to a self-diagnosis process so that any user of the developed application "My color My style" could easily get image consulting results. The result of this study contributes to increase accessibility of image-consulting to a broader audience and also to make it easy to get results by using an application for smart phones. Moreover, this study contributes in saving time, investment, and cost on image consulting services.

Session 2: Applied colorimetric elements

THE HUMAN SKIN COLORIMETRIC AND EVALUATION WAY APPLIED SPECTRAL IMAGING AND ANALYSIS OF OPTICS STRUCTURE

OSUMI, Masayuki
Office Color Science Co., Ltd.

ABSTRACT

The human skin is one of the difficult objects to get high accurate measuring result by ordinary contact type spectrophotometer. As the reason, the human skin surface has extremely complex structure and half-transparence phenomenon. In this study, the human skin measuring way was applied non-contact type spectral imaging, and system was composed with wide band white LED light source, liquid crystalline tunable filter, Peltier cooled monochromatic CCD sensor, and laser projector for 3-Dimensional scanning to compensate curvature of image measuring area. Subjects were 2 males and 3 females, and measured part was medial surface of lower arm.

Each subject skin was measured from 420 to 700nm each 10 nm by non-contact type spectral imaging, and compared to contact type spectrophotometer with 150mm size sphere illumination. As the result, each reflectance was almost same in short wavelength, but different from 580 to 700nm wavelength. To confirm this phenomenon, human skin was measured by sphere type spectrophotometer with various illumination and detection diameter. Illumination diameter was more than 30mm, reflectance profile was same as noncontact type spectral imaging measured profile. According to this result, double layer model which are composed half-transparence orange colored filter and violet colored substrate layer was made to reproduce this phenomenon and measured spectral reflectance. These two layers were controlled thickness, $K\lambda$ and $S\lambda$ absolute coefficient of Kubelka-Munk Theory. The both spectrophotometer measured result of this model were same as human skin, and got highly accurate reproduced result.

To evaluate surface of human skin, each wavelength images, XYZ images measured by non-contact spectral imaging with gonio-photometric way, were applied Laplacian filter calculation and analyzed correlation between calculated value and each age of subject. The results of correlation about human age, Laplacian filter value, spatial frequency, wave-length were shown in this study. This colorimetric way was quite useful and high possibility for evaluation of the human skin characteristics.

PRACTICES AND ACTIONS IN CONTEMPORARY ART: “SERIGRAPH POTTERY BOND WITH COLOR FUSION”, CLAIMS THE CERAMIST ARTIST AS THE INTELLECTUAL OF HIS TIME

BARRIOS, Silvia
Grupo Argentino del Color

ABSTRACT

La serigrafía es un proceso de impresión conocido desde las antiguas culturas orientales. Y es allí, en oriente, donde la porcelana y la cerámica en estrecha relación con el tratamiento de superficie de diseños seriados (color e imagen), cobran una fuerte identidad que traspasa los límites entendidos por nuestra sociedad occidental. En Oriente se desdibujan desde lo vivencial los límites de lo artesanal, industrial y artístico. La porcelana impresa sugiere acción y metamorfosis activa, asignando una fuerte identidad al artista ceramista que la acoge en su práctica. Estos son quienes desde un esquema visual preponen proyectos cerámicos, en muchos casos escultóricos y performáticos para las nuevas tendencias en la moda y en la industria de cerámicos. Un ejemplo propio de lo expuesto son las acciones presentadas para la temporada Versage 2014, que re significan con poética en textiles, la iconografía de las diferentes dinastías, impresas con azul de cobalto en la porcelana de Jingdezhen, en China.

En occidente la invención de la serigrafía en gran escala, como técnica artesanal que requiere del grabado en sedas, data de principios del siglo XX y la utilización en forma masiva sobre papel, telas, vinilo y otros elementos no vitrificables, se produce en la década de los años sesenta. Son los artistas más representativos del arte Pop americano, quienes reivindicaron este procedimiento gráfico en prácticas artísticas.

A partir del 2007 con la creación del proyecto “Serigrafía en las Artes del Fuego en Latinoamérica y el Caribe” comienza a vislumbrarse los alcances que la serigrafía cerámica proporciona a la resolución de proyectos de imagen, al manejo del color, y a la inmediatez de la copia, y es cuando la técnica pasa a satisfacer las exigencias y problemáticas de la imagen contemporánea.

Hasta esa fecha fueron muchos los estudios publicados de investigación y experimentación de reconocidos ceramistas occidentales y varios libros editados, que hablan de transferir imágenes fotográficas al cuerpo cerámico. En muchos casos con óptimos resultados pero surgían varias problemáticas, de las cuales las dos más importantes son:

Excesivo tiempo de ejecución del trabajo, cuando el artista debía afrontar un esquema que requería de la multiplicidad de imágenes ya que con la monocopia se complicaba la ejecución de la práctica en tiempo real disponible.

Limitación en el uso del color, ya que estaba sujeto a las tonalidades que arrojaban los óxidos a cierta temperatura de maduración (negro de bajo valor, rojizos o sepias) en las copias de impresoras requeridas para la transferencia de imágenes.

Antes del 2007, la serigrafía vitrificable asomaba en algún cerámico artístico muy tímidamente como foco aislado, puesto que hasta esa fecha, no era considerada con los potenciales de herramienta visual para una propuesta artística, ya que la conceptualización que tenía el artista ceramista sobre la disciplina de producción en serie, era aun una mirada moderna ubicándola, desde la cronología de la historia del arte, que implicaba la necesidad de hacer una división entre lo artístico, lo artesanal y lo industrial.

En 2013 acontece un encuentro regional cultivado durante 7 años de recorrido por del proyecto "Serigrafía en las Artes del Fuego". En este encuentro salen a la luz los primeros resultados de los grupos y colectivos de artistas formados en la técnica gráfica de fusión. Varios países presentes realizan un intenso intercambio cultural y presentan prácticas multimediales de gran escala sobre la imagen seriada plasmada en soporte cerámico. Surge de ese encuentro el "Movimiento cerámico-gráfico de América Latina y el Caribe."

Actualmente el artista ceramista contemporáneo, comienza a vislumbrar la posibilidad que arroja la serigrafía vitrificable como recurso estético para afrontar las exigencias de prácticas y acciones en el contexto de un campo artístico complejo y cambiante. El artista ceramista ha comenzado a **cohabitar e interactuar con el objeto, la técnica, la inmediatez y el pensamiento.**

Para manejar esta problemática, fue necesario valerse de cierto conocimiento científico sobre los materiales de fusión que engloban a la imagen y tomar contacto directo con la técnica para realizar la producción de un esquema visual.

Dotado de estos elementos, en el artista ceramista no existen impedimentos para materializar un proyecto de imagen-color y lograr un sentido crítico. Esta posición ubica al artista ceramista, como el intelectual de su época.

PEYOTE AS THE ESSENCE OF COLOR IN WIXARIKA ART

BOJÓRQUEZ Martínez, Blanca Alicia

Centro Universitario de Ciencias Biológicas y Agropecuarias,
Instituto de Medio Ambiente y Comunidades Humanas (IMACH)
Departamento de Ciencias Ambientales, Universidad de Guadalajara, México

ABSTRACT

El origen del arte Wixárika radica en una tradición ancestral; el plasmar de manera física, las imágenes visualizadas por los chamanes, inducidas por la ingestión de peyote (hikuri), su cactus sagrado, permitiéndoles, franquear el umbral de lo desconocido y así relacionarse con lo divino. Estas obras son hechas con chaquira o con hilo de estambre, cada una lleva simbólicos motivos, historias de su cultura y leyendas de su cosmogonía, que nos ofrecen un panorama de su sociedad. El objetivo de este trabajo es dar a conocer la influencia del peyote en el colorido arte Wixárika y como influye este en su vida diaria a través de su vestimenta y sus ofrendas. Es debido a la importancia de su mundo sagrado y su intrínseca relación con su modo de vida, que en su arte se expresan siempre cientos de historias que narran la mitología y cosmovisión de esta fascinante cultura. La artesanía no comercial, esta dedicada a narrar sus diversas vivencias religiosas en cada uno de sus autores, convirtiéndose en fantásticas piezas de hermosos colores y figuras inimaginables, que pueden ser concebidas sólo en la mente del artista Wixárika, el cual posee una personalidad independiente con relación a otras etnias del país, etnocéntrica y tradicionalista. En los días de fiesta en que se reúnen en el centro ceremonial común, lucen sus bellísimos atavíos, ricamente bordados, pintan sus rostros y comporten alimentos y bebidas.

Session 3: Art, color and traditions

COLORS AND COMBINATIONS IN THE CAVE PAINTING OF ATACAMA DESERT, CHILE

BRANCOLI, Maria Bernardita
AHUMADA, Daniela; AVELLO, Lorena; RIQUELME, Paulina
Universidad del Desarrollo. Asociación Chilena del Color

ABSTRACT

En el norte de Chile, en el desierto de Atacama existe una gran conjunto de pinturas rupestres que se distribuyen en quebradas y aleros de difícil acceso. En su contexto formal estas obras, son composiciones visuales bidimensionales, que se comportan como figuras de dos dimensiones en el plano, ancho y alto. Se asemejan en aspectos de ejecución a la caligrafía, una sumatoria de gestos que sólo a través de pequeños detalles podemos suponer la herramienta utilizada para su materialización.

Este resumen forma parte de una investigación FONDECYT REGULAR N° 1070083, a cargo del arqueólogo Francisco Gallardo Ibáñez, realizada entre los años 2007 y 2010. En ella participaron en terreno un equipo multidisciplinario de arqueólogos, antropólogos, conservadores y diseñadores, donde se registraron una serie de obras de anónimos artistas plasmadas en las rocas. El objetivo de investigación del equipo de diseño era poder recoger el máximo de información de la forma de elaboración de las pinturas en los muros y a la vez establecer paletas de color y sus combinaciones en los paneles. Para hacer esta investigación, se diseñó una metodología de trabajo que consistió en: registro fotográfico, dibujo de cada una de las figuras de manera lineal para captar detalles gestuales y morfológicos de la construcción de las formas, luego en otra camisa de papel se consigna detalladamente el color para obtener datos importantes de la calidad de los pigmentos utilizados como densidad, cambios de color, superposición, degradación etc. Para la realización de este registro se elaboró una paleta de color basada en la nomenclatura Pantone, para así estandarizar y poder consignar umbrales de color, frecuencias de uso y combinaciones. A través del estudio de alrededor 500 pinturas se pudo concluir en una paleta de 20 colores y sus combinaciones, constituida básicamente por una variación de rojos, ocres, amarillos, negro, blanco y turquesa; donde el color rojo es el elemento básico de construcción de las formas, independiente del fondo y textura del soporte.

COLOURS IN OLD AMISH QUILTS

HOMLONG, Siri

University College of Arts, Crafts and Design, Stockholm, Sweden

ABSTRACT

The Amish religious movement have its roots in the Protestant Reformation in the 16th century. The Amish people are anabaptists and have strict rules for their way of life. They were persecuted in Europe and Amish groups emigrated to Pennsylvania. Today the most traditional part of the movement – the Old Amish People – lives in Lancaster County west of Philadelphia, USA. This paper describes a study of the colours in Old Amish Quilts, traditional Amish patchwork quilts used as bed covers. The patches are single-coloured fabric pieces forming clear symmetrical patterns with deep and strong colours. The quilts are important in Amish culture; they are made for the bride's wedding chest. Nowadays traditional Amish quilts also are made for tourists as wall decorations – "wallhangings".

The selection of quilts for my survey consists of five Old Amish Quilts from Lancaster Heritage Museum and The American Quilt Study Group, 15 quilts, at that time, belonging to The Esprit Collection and eight new quilts with traditional patterns (wallhangings). The colour analysis was carried out using Natural Colour System (NCS) with the aim of identifying general principles for selection of colours.

The analysis shows that most hues are located in the lower part of the colour circle – from red (R) to green (G), and most nuances - with relatively high degree of blackness or chromaticness - in the lower part of the colour triangle. Colour choice is often dependent on moral or religious preferences. For example, in quilts from Lancaster County, yellowish colours are - as representing "hochmut" (arrogance) - regarded as bad colour choice.

The strong colours in Old Amish Quilts have no counterpart in public life. In Lancaster county Amish people wear black, brown and dark blue clothes and their wagons are black; colourfulness is restricted to the bedrooms and the private sphere.

Session 3: Art, color and traditions

INFLUENCE OF COLOURS ON KERALA MURAL ART

RAVI, Sandhya
Bangalore University

ABSTRACT

The word 'mural' is derived from the Latin word 'murus', meaning 'wall'. Murals refer to paintings embellished on visual components like the wall, ceiling, or other huge lasting surfaces. The murals of Kerala unfathomably stand out for their prominence in beauty, clarity and symmetry with unmatched linear accuracy. The tradition of mural painting in Kerala is unique in the world, and it is extremely rich with symbolism. Made only with natural mineral pigments, the colors represent the qualities of the three gunas- sattva, rajas and tamas. Sattva is purity, which is usually represented by the colour green; the figures painted with green are those for whom knowledge is the chief characteristic. Those in whom rajas, the spur to activity, is predominant, are painted in golden yellow. Tamas, inertia, the least pure is, curiously, represented by white. The traditional colours used in this art are red ochre, yellow, green, blue, white and black. The traditional style mural art form uses natural pigments and vegetable colours. But, today the colours used are synthetic colours which are bright.

The subjects for the painting are derived from various Vedic texts, are not a fanciful representation but drawn from the description in the invocatory verses or dhyana slokas. Flora and fauna and other aspects of nature are pictured as backdrops, in highly stylized manners.

The line drawing is made initially on the prepared fabric and subsequently the five colours are applied. The entire process of mural painting involves meticulous balancing of various components. The great and distinctive art displayed in these paintings reveal a wonderful vitality and intensity of feeling, meditative charm, divine majesty, decorative delicacy, unique verisimilitude, subtle charm of colour, fine texture and marvelous draughtsman ship.

THE COLORS OF BELÉM, PARÁ. A QUEST FOR AN URBAN CHROMATIC IDENTITY

OLIVEIRA Cesar, João Carlos de
Faculty of Architecture and Urban Planning of the University of Sao Paulo

ABSTRACT

This study is part of a research conducted by the University of São Paulo and implemented in several Brazilian cities about urban chromatic identity. The objective of this paper is to present, through the work conducted in one of the cities chosen to be the subject of this study which here is Belém, Pará, the methodology used to carry out studies and chromatic readings of large and medium-sized cities. The aim is to develop a chromatic palette that is representative of these urban centers.

Belém is located in the northern part of Brazil and is the capital of the State of Pará. The city, which is over 400 years old, has about 1.5 million inhabitants and had its heyday in the early twentieth century with the extraction and commercialization of rubber in the Amazon, the "rubber boom". One of its characteristics is to present an intense chromatic diversity in buildings that blend various historical periods.

Its historical center preserves some important architectural icons as a fisherman's market, several churches and a shopping center with old buildings, many of them coated with ceramics and with a chromatic composition characterized by high saturation colors and sharp contrasts of light.

The methodology used in this study is based on photographic records and the development of chromatic palettes through appropriate softwares, and, whenever possible, in loco readings through the NCS colour scanner, aiming at comparing outcomes. As results, photos, charts and tables in Lab, NCS, Munsell, and HSB systems are presented.

Session 4: Color in the cities

IMAGE CITY. COLOR, NARRATIVE AND MEANING IN ARTISTIC CREATION

FRAGOSO Susunaga, Olivia

División de Ciencias y Artes para el Diseño

Universidad Autónoma Metropolitana - Azcapotzalco, México

ABSTRACT

El color es un elemento que, en la narración, articula la realidad, representación y símbolos a dos niveles: forma y significado. Estas interacciones siguen, en el trabajo de creación y en el consumo del arte, una estructura compleja de significación que despliega sentido inmerso en el contexto cultural. El trabajo pretende exponer la forma en la que en La Ciudad de la Imagen, serie de imágenes pictóricas en las que puede analizarse la forma en la que operan elementos formales de la teoría del color, con los narrativos del color con los que en la obra, se manifiestan aspectos culturales, que proveen de significados comunes relacionados con los elementos contextuales marcados por la historia y la ideología. Se busca reflexionar sobre la forma de cómo el sentido se desplaza del creador al receptor en los diferentes elementos pictóricos que facultan la comprensión del sentido manifiesto en la obra. Las imágenes plantean enfoques sobre la vida cotidiana al transitar en el paisaje urbano que representa espacios de una ciudad con los que se busca evidenciar la manera en la que el color funciona como referente simbólico en el que la originalidad es crucial y la visión los valores estéticos se convierten en una forma de comprensión del mundo conducida por la narración. En la representación de la ciudad en La Ciudad de la Imagen se observa la forma en la que el color configura historias en las que los personajes y el espacio urbano representado producen sentido donde, mediante el color, la fantasía y lo verdadero se re-organizan sin afectar la verosimilitud al generar en la obra una estética visual basada en la mirada que el creador alterna con el espectador en la que se radicaliza una propuesta en donde se otorga a la realidad un valor que antes no poseía.

COLOR OF REVITALIZING HISTORICAL AREAS: THE RED HOUSE PROJECT IN TAIPEI CITY

Tien-Rein LEE, Monica KUO, Chun-Hung CHEN
Department of Information & Communication, Chinese Culture University

ABSTRACT

Taipei City mira hacia atrás a una comparativamente corta historia con registros que datan de principios del siglo XVIII, y la intensificación de la construcción a partir de finales del siglo XIX. The Red House , uno de los ejemplos muy singulares de la arquitectura histórica en el distrito Wanhua de Taipei, fue construido por el arquitecto japonés Kondo Juro en 1908: un edificio octogonal con una fachada de ladrillo rojo , conocido como el Mercado Nuevo , cuando abrió por primera vez a la público , sino que se utiliza como un mercado de libros , el teatro y el cine a partir de 1949 . El Gobierno de la Ciudad de Taipei comenzó la renovación de la Casa Roja, en 1999, y desde el año 2007, la Fundación Cultura de Taipei dirige el lugar al acoger actividades culturales. Esta investigación plantea la cuestión de si la preservación de la selección de color edificio histórico debe mantener el carácter de la señal, mientras que la creación de una impresión de conjunto armónico con respecto al conjunto arquitectónico del barrio? Una encuesta de color basado en la Teoría de Concentric Circle (Burgess , 1923) ha llevado a cabo para construir la base para la planificación de color barrio, la investigación de la percepción del color y de la respuesta de la gama y cerca de mayores distancias del punto de referencia. A continuación, el concepto fue propuesto para cambiar los colores existentes de la zona en un conjunto más armónico a juego con y haciendo hincapié en el edificio histórico.

Session 4: Color in the cities

IMAGE OF THE CITY: COLOURS, CULTURES, ARCHITECTURES

NOURY, Larissa
«Colour-Space-Culture»
CEC, Paris, FRANCE

ABSTRACT

The city with its colour harmonies, rhythm and perspective is a self-portrait of our society. In the process of social development and perfecting of urban art a variety of different types of colour harmonies and architectural styles was created. The introduction of colour combinations in correspondence with different styles of urban art creates a visual composition of the city which is a synthesis of the superposition of its historical layers. The city's image (colours, cultures, architectures) is enriched by the perception of all visual elements of our built environment (architecture, urban and landscape design, infrastructure). It is vital for urban space understanding and improvement of city's environment quality to have the knowledge about both national and local tradition, historical and modern colour preferences and cultural particularity.

Our work raises a historic panorama of colour in the city of Saint-Petersburg during the XVIII-XXIth century, highlighting certain symbolic movements such as the Baroque, the Classicism, the Empire, the Rococo, the Art nouveau, the Russian avant-garde, the modernism or the street art. It depicts the system of colour harmonies and describes the palettes which allow us to understand their evolution. The art of colour as a separate material and colour-light reinvests the image of the city. There are many factors showing that the question of colour in the city, far from being marginal has now become critical.

GENUS DAHLIA, COLOR CARRIER ACROSS THE WORLD

GUEVARA Fefer, Patricia¹; MUÑOZ Ocotero, Verónica¹;
BIELER Antolín, Ana Isabel²

¹ Laboratorio de Fitoquímica

² Microcine.

Facultad de Ciencias. UNAM, México

ABSTRACT

The Dahlia genus of the botanical family Asteraceae, is conformed from 35 endemic species wild of Mexico, only four of which constitute the genetic basis with that have developed cultivated species, at altitudes ranging from 500 to 3500 m, now has been extended by almost all countries. The Dalia is deeply rooted to our culture and traditions. On May 13, 1963 was declared by presidential decree as the National Horticulture symbol.

Cultivation of this flower, which is actually an inflorescence (group of flowers that function as a single flower), dates back to pre-Hispanic times, when its petals were have been used as natural dyes for cotton fabrics. After the Spanish conquest, the dahlias were successfully introduced to Europe. In 1818 began genetic investigation that led to the creation of clusters with different shapes and colors.

The synthesis of compounds that determine the colors is genetically regulated through metabolic pathways that meet the needs of the organism to survive, as a defense mechanism, to favor reproduction or play an ecological role. The major compounds in flowers are anthocyanins, anthoxanthins and carotenoids. The change in color depends on the presence or absence of one or more of these substances, structural alterations in their molecules, changes in the pH of the cell sap, or quantitative changes affecting the amounts of pigment produced.

The purpose of this paper is to disseminate through the history, chemistry and biology of genus Dahlia the close relationship between the color and nature, constant reason of research in the area of ornamental plants.

PRODUCTION OF NATURAL PIGMENTS FROM ANTARCTIC FUNGI *EPICOCCUM SP.*

HENRÍQUEZ, Marlene; VACA, Inmaculada
Universidad de Chile

ABSTRACT

Currently natural pigments industry is on the rise. The consumer preference for compounds of natural and no harmful origin has led to the demand for the replacement of synthetic dyes. The most common sources of natural pigments are plants, animals (insects) and microalgae. However, the access to an annual stable production of pigment from them is a complex and costly process. The use of microbial strains, particularly fungi, as stable and controlled source of pigment is an interesting option. So far, research and use of fungal natural pigments have been focused on strains of the genus *Monascus*. However, fungi of the genera *Epicoccum*, *Penicillium*, among others, have also shown the ability to secrete pigments.

Currently, in our laboratory we have three strains of the genus *Epicocum* isolates from Antarctic sponges. These strains produce pigments with colors ranging from red to yellow. A study of the pigments produced by these strains sequentially varying the culture medium (carbon source, salt concentration) and culture conditions (temperature), has shown that these variables are critical in controlling the color of the pigment majority secreted into the medium. Interestingly, all the pigment extracts of these strains have a high antioxidant activity.

Therefore, in this study, we present an Antarctic microbial source of natural pigments with the capacity to produce pigments of different colors according to the culture conditions employed. In addition, these pigments have antioxidant activity. These pigments have good projection for their use in the food, cosmetic, pharmaceutical and textile industry.

Supported by Fondef VIU 120034, Conicyt.

COLOUR IN IMITATION OF NATURAL MATERIALS

MARTINI, Anna
University IUAV of Venice

ABSTRACT

Historical architecture “wears” colours and materials that are typical of its place and culture. Wood, clay and stone, with several gradations of hue and grain, they usually identify a traditional urban character and locate it onto definite temporal and geographical coordinates. Today’s architecture adopts high performance technologies and materials, different from the traditionals, shooting for a dialogue with their physical surroundings and local tradition. Composite and recast materials are able to reproduce the same senses of touch and sight the traditional materials like stone, wood, ceramic (with their colours and surface finishes) can instil in the historical architecture. Application of glass, carbon or aramide fibers as a compound strengthener, permits using of a wide colour range and the control on the material surface’s transparency and reflection.

Mixing colour into these composite materials, helps to recreate, for example, the “rock effect”, as it occurs in the Villaverde project by Chipperfield, in Madrid or in the First National Bank Stadium in Joannesburg, in which GRC panels, with the addition of reddish and yellowish natural tonalities, typical of the local land have been used.

Colour in architecture is often coupled with light: those two elements together can create a white but iridescent surface, able to call to mind a shell, a natural protective ceramic case. A result achieved for the Finland pavilion at the Shangai expò whose skin, made of white composite scales that are provided with several grades of transparency.

The colour-light duo, joined to movement, can also recreate the same play of colours that typical of the wooden slats of a mountain hut, as in the project Le Terrazze, in Varese. Here the designers applied a cladding system made of vertical composite panels that ring around a central pivot, creating a colour effect that is comparable to the neighbour ones.

COLOR IN NATURE: INNOVATION FROM LIVE MODELS

RAMÍREZ Ramírez, Mauricio¹; RAMÍREZ Ramírez, Rodrigo²

¹ ITESM, Campus Ciudad de México, Biomimicry Professional Certified.

² Color Research Group, Environment Department

Universidad Autónoma Metropolitana - Azcapotzalco, México

ABSTRACT

Color is an important component of the Biotic world. Color is used in life in many functions. Many organisms use color as inter-species attraction signal, (v.g. flower and pollinators). In other cases the attraction is intra-species, indicating the health and strength condition of an organism to attract sexual partners (v.g. peacock). Color is used also to defer predation, communicating the presence of dangerous compounds in the organism, to defer predation. The Batesian mimicry, is a strategy in which non-poisonous snakes imitate the colors of poisonous snakes to cheat the predators. They avoid being predated without investing energy to develop poison.

Color is used also as camouflage, to be unseen in their context and avoid predation, but also to stay hidden and surprise their prey. There exist also strategies of dynamic coloration, where the color changes according to the context. The chameleon can mimic their context adjusting their color to some particular context. Some fishes change color and geometrical patterns in their skin according to local environmental conditions. In the lecture there will be presented some ways by which Color is created in Nature: from pigments, to the use of symbiotic associations and the Structural Color, strategy which use reflection and refraction in micro- and nanostructures (uncolored) that reflect particular gammas of the light spectrum. The colors produced are very bright, colorful, and in some cases may change (v.g. Morpho butterfly).

It will be explored how these color strategies can be mimicked for human use instead of toxic pigments. The lecture will present biomimicry case studies, like Mirasol as ultra-low consumption display Chromaflair (color changing paint), Morphotex (color-changing fibers for textiles), showing how Nature can inspire our new technology in color creation, for innovation and reduction of environmental negative impact associated to color.

OBTAINING A HANDICRAFT TEXTILE PRODUCT APPLYING NATURAL DYE COCHINEAL

ARROYO Figueroa, Gabriela¹; ENRÍQUEZ Razo, María Dolores²;
PÉREZ Nieto, Antonio¹; HERRERA Méndez, Carlos Hernán¹

¹ Universidad de Guanajuato, campus Celaya-Salvatierra,
Departamento de Ingeniería Agroindustrial.

² Universidad Tecnológica del Suroeste de Guanajuato,
Departamento de Ingeniería en Diseño textil y Moda.

ABSTRACT

Hablar de México es hablar de un país sumamente rico en tradiciones, costumbres, colores, colorantes y artesanías. En la actualidad se sabe que los colorantes sintéticos son nocivos para la salud del ser humano, además de afectar el medio ambiente, por tal motivo se ha buscado sustituirlos por colorantes naturales, el insecto grana carmín conocido también como grana cochinilla es un ejemplo claro de un organismo animal del que se puede obtener un colorante natural, ya que posee un gran poder tintóreo. En la Universidad de Guanajuato dentro del Departamento de Ingeniería Agroindustrial se ha venido trabajando con la aplicación del insecto mencionado en el área textil y se quiere darle un uso específico a las fibras teñidas obtenidas. Por lo que el presente trabajo tiene como finalidad la obtención de un producto textil artesanal usando una fibra natural animal como lo es la lana teñida con el colorante natural grana carmín. Se estableció una metodología técnica partiendo del teñido artesanal que permitió tener un control durante el proceso de teñido de lana con grana carmín. En la parte experimental se aplicó el método de premordentado y mordentado directo y se realizaron diferentes etapas donde se midió la temperatura y pH, se trabajó además con diferentes cantidades de mordientes, hasta lograr un teñido adecuado de la fibra natural, ya que el valor de pH, cantidad de mordientes y temperatura durante el proceso alteran el color en la fibra. Finalmente con el proceso de teñido se obtuvo una gama de colores desde el rojo al morado, además se trabajó en diferentes diseños, hasta obtener una serie de lámparas y caminos de mesa como productos textiles artesanales. Este proyecto es de suma importancia dada la innovación del uso de la grana carmín en productos textiles artesanales actuales.

Session 6: Theory and color in Architecture

JOSEF ALBERS TECTONIC COLOR: FROM THE GOTHIC CATHEDRALS TO THE PYRAMIDS OF MEXICO

CARVALHO Santos, Paloma O. de
SENAI CETIQT

ABSTRACT

An image of a Gothic cathedral was displayed at the 1919's Bauhaus manifesto. There, the idea of "construction", derived from architecture, was understood in the sense of social cooperation as well as in the formal one: modern creation that arises from the control of means. The work of Bauhaus teacher, Josef Albers, reveals that to control the effects of harmony and dissonance in a composition it's necessary to quantify the dynamic forces of its elements, leading to the interaction of color and the plastic action.

So, the measurability of the effect of color is what allows it to become a structural element. Also a set of two or more colors supposes a sequence, a pace, as explained in the Weber/Fechner law: it's the ratio found in his painting that allows Albers' orchestration of colors.

This take on the artists work arises from his calculation of the structure in his homage to the square series. For instance, he praises the Munsell system in his book "Interaction of Color" as the only one that implements a quantitative formula to infer quantity for colors.

Brenda Danilowitz (the curator of the Anni and Josef Albers Foundation) astutely observed the great influence of pre-Columbian, mainly Mexican, art in his work. Likewise, Nicholas Fox Weber, pointed out the study of Gothic architecture in his youth.

This article derives from the authors' doctoral dissertation on Albers' idea of color and aims to address its symbolic meanings. AS The upward vector, one of the resources associated with the intangible, transcendent values of Catholicism in the gothic period. In HIS work there's a similar use of verticality, leaving the equilibrium for dynamism and effects of topography combining rationality and expression, achieving a new idea of harmony.

IDENTIFICATION OF THE PERCEPTION VARIABLES TO BE USED TO ASSESS THE VISUAL IMPACT INTEGRATION ARCHITECTURES IN THE CITY OF VALENCIA

SERRA, Juan; LLINARES, M^a Carmen; IÑARRA, Susana;
TORRES, Ana; GARCÍA, Ángela

Escuela Técnica Superior de Arquitectura Universidad Politécnica de Valencia

ABSTRACT

Este estudio forma parte de un proyecto de investigación cuyo objeto es la definición de estrategias de mejora en la integración visual de arquitecturas con impacto en el paisaje, basándose en criterios cromáticos. Como casos de estudio para intervenir en este proyecto, se han seleccionado una serie de edificios del centro histórico de Valencia que han sido identificados en la legislación urbanística por generar impacto visual. Sobre estos edificios se han aplicado una serie de propuestas de intervención mediante color con la finalidad de reducir su impacto estético y mejorar la valoración del ciudadano. Estas propuestas se han materializado en forma de fotomontajes y conforman una "base de estímulos" para ser evaluada por los observadores participantes.

Como herramienta de análisis para recoger la respuesta del observador ante las diferentes propuestas cromáticas, se ha diseñado un cuestionario basado en trabajos de integración paisajística realizados previamente. Estos estudios recogen, mediante escalas bipolares, un conjunto de adjetivos que evalúan la respuesta estética de los usuarios a las fachadas coloreadas. La limitación que puede plantear la utilización de estas expresiones obtenidas con usuarios de otras localizaciones y en otros momentos del tiempo es que pueden no corresponderse con el esquema conceptual de los usuarios objeto de estudio. Para adaptar e incluso ampliar este conjunto de expresiones se ha utilizado la técnica de investigación cualitativa del "Focus Group". Esta técnica exploratoria ha permitido identificar criterios, impresiones y actitudes de los diferentes sectores de la población, en torno al concepto de la integración paisajística. De esta manera nos aseguramos de que los cuestionarios recogen un conjunto de variables fácilmente reconocibles por el observador. La definición adecuada de estas variables es fundamental para su posterior correlación con la valoración final de la intervención o con los atributos de diseño.

FRACTAL OBJECTS AND PROBABILISTIC COLOR DISTRIBUTION IN ARCHITECTURE

LIMA, António

Universidade de Lisboa - Faculdade de Arquitectura / C.I.A.U.D.- Centro de
Investigação em Arquitectura Urbanismo e Design

ABSTRACT

With the publication, in 1975, of *The fractal geometry of nature*, Benoît Mandelbrot, created the foundations of a new geometry, freeing geometry itself from the strict understanding of form and space as defined by its Cartesian dimensions or strictly based on Euclid's postulates and common notions and providing, with it, new instruments of reflection, new languages, new concepts, and new techniques. With the research we started for our PhD thesis, through the design of specific algorithms, written in AutoLISP, under the AutoCAD environment, where probabilistic colour characteristics were introduced, this relatively new geometry continues to exhibit its potentiality, and ability, to generate objects with very interesting features that can be used in architecture as well as in design. Starting with a deterministic object, the *Menger sponge*, and ending with a probabilistic one, these new instruments were presented by stages where, in a final stage, using the AutoCAD's 256 colors palette, we introduced color to the algorithm, where, from a single color to an interval of 255 colors, a large variety of sequences are available. Later, in a project for a house in the southern region of Portugal, we started to explore the use of these same concepts in architecture, using a two iterated fractal approximation object, based on a probabilistic colored fractal cube with altered edge proportions. With this first approach we intended to demonstrate that fractal geometry, through the use of fractals along with the introduction of color characteristics, can be an integrating tool of architecture composition elements, giving them a coherent unity, creating new encouraging mechanisms of reflection about these two aspects. Fractal geometry and its connection to chaos theory can, through the application of some of its concepts, establish a new paradigm of complexity in architecture, as well as in design, as a valid and dynamic operative tool, able to define and generate new models, new shapes and to establish new languages within which color communicates.

WHAT DO YOU MEAN BY WHITE AND BLACK?

Veronica AMICO, Luca BOSSINI, Giulia CRISTOFORETTI, Osvaldo DA POS,
Pietro FIORENTIN, Francesca FREULI, Sara GUIDOLIN, Concetta SALAMINA,
Alessandro SCROCCARO
University of Padua

ABSTRACT

Four experiments were performed to measure the similarity of chromatic colours to White and Black, with the hypothesis that, in agreement with the actual Natural Colour System, Whiteness Blackness and Chromaticness add up to unity (the same should hold for greys in which Chromaticness is zero). Results depended heavily on the procedure. In experiment 1, Whiteness (and Blackness) of 16 cylindrical samples (4 intermediate hues x 4 nuances) were independently evaluated by 10(naive)+3(expert) participants who chose a gray cylinder appearing of the same Whiteness (or Blackness) of the sample. Results show that Whiteness and Blackness sum up to unity (all participants, 25 data per point; Whiteness as a function of Blackness: $y = -0.9589x + 102.3$ $R^2 = 0.99$). Almost the same results were obtained in experiment 2, when Whiteness and Blackness of singularly observed samples over a white background were evaluated by 3 different participants in a visual scale (43 data per point: $y = -1.0063x + 98.803$ $R^2 = 0.99$). In experiment 3 the same samples were singularly evaluated over a wide coloured Mondrian background by 4 different naive participants, again with almost the same results (15 data per point: $y = -0.9215x + 31.829$ $R^2 = 0.90$). In experiment 4, Whiteness and Blackness of 48 flat samples of different hues and nuances were evaluated, in groups of 12 each (previously ordered from the most to the least whitish [blackish]), over a white background, by 2 expert and 3 naive different participants. Results are completely different (Whiteness as a function of Blackness: $y = -0.4501x + 40.248$ $R^2 = 0.15$). Results of the first 3 experiments, which show that Whiteness and Blackness are independent from Chromaticness, are incompatible with the actual NCS, while results of the last experiment are compatible. We discuss the meaning of this relevant difference.

Session 7: Meanings in color and language

CREOLE COLOURS: THE VISUAL MEANINGS IN IBEROROMANCE CREOLE LANGUAGES

ARAGÓN Aquino, Fátima Karime

Project "Cognitive Creolistics". Department of Aesthetics and Communication - Linguistics.
Aarhus University.

ABSTRACT

In the Western World the existence of colours such as *red*, *blue* and *yellow* is often taken for granted. Nevertheless, colour conceptualization varies cross-linguistically and encodes cognitive, linguistic and socio-cultural elements that can offer information about the diverse ways in which the visual world is perceived and transmitted. This paper discusses the concepts of colour in Iberoromance Creole languages using the Natural Semantic Metalanguage approach. In this framework (Biggam 2012; Goddard & Wierzbicka 2014; Wierzbicka 2006, 2008), the semantics of colour can be associated with speakers' cultural, historical and environmental contexts.

The Iberoromance Creoles emerged from the linguistic-cultural contact between European colonial languages (lexifiers), Spanish and Portuguese, with indigenous and West-African languages (substrate) in three continents: South America, Asia and Africa. Previous research on creoles (cf. Moro 2007) and Iberoromance Creoles has identified West-African substrate influence on the Atlantic Creoles (cf. Jacobs 2012; Quint 2008; Maurer 2009; Moñino 2012; Schwegler 2000). These studies illustrate that although some Iberoromance Creoles make use of the form of the Spanish/Portuguese lexifier colour items, the meaning and interpretation of these items differ from their European origins. The present study (Aragón Aquino et al *In progress*) aims to explore the way creole speakers conceptualize their visual worlds. In addition, it aims to reveal to what extent the creole colour concepts reflect the meaning of the colonizers (European semantics), or the original indigenous perspectives (e.g. West-African semantics), or a combination of the two; and to identify local innovations.

Initial results confirm that that the forms of the colour concepts are derived from Spanish and Portuguese. However, we also observe that some conceptualizations can be traced back to substrate influence, such as the Palenquero derivations *blankito* 'clear', *negrito* 'dark', *rrohíto* 'vivid' reflecting brightness rather than hue (Moñino 2012).

MEANING AND CULTURE: THE COLOUR WORDS IN OAXACA

ARAGÓN Aquino, Fátima Karime

Project "Cognitive Creolistics". Department of Aesthetics and Communication - Linguistics.
Aarhus University.

ABSTRACT

This paper presents the first ethnolinguistic study used to identify and explain the meanings of the Mexican Spanish colour words in Oaxaca using the Natural Semantic Metalanguage (NSM) approach (Wierzbicka 1990, 2005, 2006, 2008). In this approach, the meaning of colour words and visual descriptors are understood in terms of similarity with some widespread natural and material prototypes, or referential points, identified in speaker's cultural and environmental contexts.

The color list task (Davies & Corbett 1994, 1995) and a cognitive salience index (Sutrop 2001) were used to identify the most frequent colour words. Also, the folk conceptualizations of visual meanings in these colours were explained through the NSM approach.

The results show 166 different colour words within Oaxacans' vocabulary. Also, the results show that visual meanings embedded in the most salient Mexican Spanish colour words rely on the following prototypes: *blanco* 'white' on *luz* 'daylight', *nubes* 'clouds' and *leche* 'milk'; *negro* 'black' on *noche* 'night' and *oscuridad* 'darkness'; *rojo* 'red' on *sangre* 'blood' and *fuego* 'fire'; *amarillo* 'yellow' on *sol* 'sun'; *verde* 'green' on *crecer fuera de la tierra* 'growing out of the ground'; *azul* 'blue' on *cielo* 'sky' and *mar* 'sea'; *café* 'brown' on *tierra* 'earth', *madera* 'wood' and *grano de café tostado* 'roasted coffee bean'. A system of 'mixed color terms' can be added: *morado* 'purple' is *rojo* 'red' + *azul* 'blue'; *rosa* is *blanco* 'white' + *rojo* 'red'; *naranja* 'orange' is *rojo* 'red' + *amarillo* 'yellow'; and *gris* 'grey' is *blanco* 'white' + *negro* 'negro', and clouds before raining.

The NSM offers an ideal approach to articulate the way Oaxacans think and talk about colour, and account for the specifics of their visual and cultural practices.

Session 7: Meanings in color and language

LET'S HEAR HARMONY OF DAYLIGHT

FOROUGHMAND, Mostafa; MOHD Fairuz; SUMARNI
FACULTY OF DESIGN AND ARCHITECTURE, UNIVERSITY PUTRA MALAYSIA

ABSTRACT

Appropriate daylighting can significantly help in improving the interior space design. The purpose of this research was to investigate how daylighting quality (daylight factor) can affect people's perception by using daylight in a religious space. Daylighting is not only facilitating the health and visual task, but can also transfer the sense of the place to the users. In this study, four different mosques with different daylighting were evaluated in terms of daylight factor by measuring lux, using photo records and users' opinion which was brought out by questionnaires. Lux meter, photo record and questionnaire was used in order to calculate, evaluate and compare natural lighting factors during daytime, between four different mosques. The results indicated that daylighting can be used to enhance and improve sense of sacredness, comfort, unity, etc. in order to create a sacred space in prayer hall for users. Practical openings design can help architects to provide effective and sustainable daylighting for interiors. Understanding the relation between daylighting and the users feeling in order to design religious building with users' interest. This study investigates natural lighting depending on daylight factor measurement, photo records and questionnaire.

GENDER DIFFERENCES FOR COLOUR NAMING IN SPANISH AND ENGLISH

Lindsay MACDONALD¹ and Dimitris MYLONAS²

¹ UNIVERSITY COLLEGE LONDON, GOWER STREET, LONDON WC1E 6BT

² QUEEN MARY UNIVERSITY, MILE END ROAD, LONDON E1 4NS

ABSTRACT

A colour naming experiment is being conducted via the Web at www.colournaming.com, currently with 12 languages, enabling a large number of observers from culturally and demographically diverse populations world-wide to contribute. The subject has to provide a name for each of 20 single colour patches, presented in sequence at the centre of the display screen. Any combination of words can be used. Data is gathered on the subject's age, gender, educational level, colour experience, display type and viewing conditions, as well as the response time for each sample.

This paper compares 2,960 colour names given by 148 non-colour-deficient observers (83 male and 65 female) in the Spanish language. Observers were located in Spain (53%), Argentina (15%), UK (11%), Abkhazia (8%), Colombia (3%) and 12 other countries (10%). Their ages ranged from 16 to 74, of whom 51% were graduates, 23% had a Master degree and 9% a Doctorate. The dataset in the Spanish language resulted in a total of 1,166 unique colour descriptors, of which 429 were used by females and 522 by males. The six colour names most commonly used by both genders were: rosa, azul, lila, verde, morado and violeta.

In the responses 56% consisted of a single word, 40% of two words and 4% of three or more words, with very similar rates for male and female. The eleven basic colour terms (BCTs) proposed by Berlin & Kay (1969) occurred in 26% of responses while other monolexical terms were involved in 28%. Male and female showed similar frequency of response for eight of the BCTs, but there were significant differences for amarillo, azul and rosa. The results of this experiment show that Spanish women were not faster to respond than Spanish men, and that they used fewer colour descriptors. This is quite different from English.

Session 8: Perception and color

THE INTER-CONNECTION BETWEEN SHAMANISM AND KOREAN MEDICATION ADVERTISEMENT DESIGN DURING THE JAPANESE COLONIAL PERIOD

KIM, Eliana

HISTORY AND CULTURE DESIGN. THE GRADUATE SCHOOL.
SEOUL NATIONAL UNIVERSITY. ADVISOR PH.D KIM MIN-SOO

ABSTRACT

The purpose of this study is to examine the Inter-Connection between shamanism, such as folklore, and Korean medication advertisement design in the newspaper during the Japanese Colonial Period. Advertisement can be seen as a mirror reflecting an era and an aesthetic phenomenon that is a medium to convey information. From such a context, medication advertisement reflects preferred medication of the public through those days' forms and contents and also tells the story of widespread diseases at that time. These days, medication advertisement and packaging follow universal designs. However, Korea's first medication advertisement design that was introduced to the world held "traditionality" as a prime value. The word "Advertisement" started to be used in the late nineteenth century and was widely used during the Japanese Colonial Period until today. Furthermore, Western civilization being imported after late nineteenth century stimulated and changed the visual culture of the Japanese Colonial Period by means of Western design techniques. The main role of advertisement at that time was to promote the source of raw materials for Japanese industry and their daily sales. However, medication advertisements published in newspapers in the Japanese Colonial Period showed the characteristics of interactions of three factors such as the introduction of Western and Japanese medication, overflow of medication advertisements and shamanism appearing in Joseon's medication advertisement. At the same time, in these advertisements, we can also find a correlation between medical pharmacy in the Japanese Colonial Period and the history of the talisman. After pillaging Joseon's national rights, while Japan recognized Western science and medicine, Japan denied traditional Oriental medicine and started cracking down on its operation. In spite of various attempts to get rid of tradition and folk beliefs, talismans were widespread and in common use.

As such, in spite of distribution of Western and Japanese medications and the introduction of their advertisement, Korea was one of the countries where people's 'self-medication' was widespread. As to this fact, the researcher thought that 'self treatment' as so-called 'folk remedy' is closely related to the above mentioned facts, and tried to examine its origin. The researcher focused on the settlement course of Korea's medication advertisement such as (folk remedy, talisman, advertisement as

Session 8: Perception and color

a strategy of marketing sales, the introduction of Western medical pharmacy and etc). The resulting analysis showed that Japanese and Western medication advertisement had scientific or stimulating forms. Joseon's medication advertisements and some parts of Japanese's on the other hand dealt with many similar aspects to talismans in the aspect of message, forms, image and typography of advertisement. In other words, we can say that Joseon's medication advertisements are involved in shamanism.

After liberation the shamanistic ad format seemed to have almost disappeared. However, we can see that such shamanistic designs appear in various ways in the brand marks of pharmaceutical or health food companies and local governments. Shamanism appearing in advertisement takes very small parts. But as shamanistic aspects also appeared in Japanese medication advertisement designs, they are one of the expressional methods of Oriental design, which can be seen as an aesthetic result born from Korea's traditional culture and history and not as an imitation of Western designs. In summary, shamanism appearing in Korean medication advertisement can be seen as some part of Oriental or Korean identity and the result of the times that naturally formed from national historicity.

Most other theses that have treated the subjects of advertisement, medication and shamanism tried to solve only relevant problems in each one's professional fields. But as an 'inter-disciplinary' research, in this study, the researcher intends to apply a cross-disciplinary perspective by connecting the topics of design (AD), medicine (medication) and religion (shamanism/folk beliefs) to interpret their relationship. As R. Barthes explained in his early days, human beings tend to take many things generated in a society as granted and naturalize them at a moment. From such context, in this study, as for medication advertisement designs in the Japanese colonial period and their meaning that have been taken for granted without attention until now, the researcher tried an interdisciplinary research of Korean advertising history.

Session 8: Perception and color

HUE ARE YOU? COMMUNICATING COLOUR TRENDS TO DIGITAL NATIVES

KING, Julie Anne

SCHOOL OF FASHION AND TEXTILES, DE MONTFORT UNIVERSITY, LEICESTER, UK

ABSTRACT

Colour forecasting originated in 1917 when 40 colours were presented in fabric swatches by the Textile Colour Card Association of America (Hope and Walch, 1990:34). Contemporary forecasting is today worth an estimated \$36bn (Barnett, 2011), with colour forecasting an integral component, the 'selection of ranges of colours that are deemed as those that will be wanted for a particular product/market at a particular time' (Wilson et al, 1999:18). Such colour information is widely used in the fashion industries where forecasters have traditionally communicated concepts through printed materials. Increasingly technology is creating an alternative with mobile apps changing the way in which colour is represented. In parallel a new generation have joined the fashion industry, Millennials, known as generation Y, born between 1981 and 1999. Numbering over 70 million in the US they have different priorities and working practices to previous generations (The Doneger Group, 2012). Millennials have driven change, demanding instant information from mobile sites, available 24 hours a day, influencing how trend information is gathered and published, through the Internet, blogs, and live streaming (Gaimster, 2012).

To test the impact of these new formats on a younger generation 78 BA (Hons) Fashion students using printed and online forecasting materials were surveyed in the UK and Hong Kong to discover their preferences for in colour trend information. Today's student uses multiple methods of information gathering, accessing information online is used extensively, 'they generally adopt more careful strategies for determining how they are going to retrieve and use information to support their learning.' (Jeffries and Hyde, 2010:138).

Results indicated students preferred online forecasts but physical samples of colour were preferable for accurate colour representation not digital colour, and local nuances between the student groups were observed in several other areas of digital colour trend representation.

A TRANSITION OF COLOUR

OLSSON. Gertrud

KTH School of Architecture, Royal Institute of Technology, Stockholm

ABSTRACT

A hundred years ago the Swedish architect Erik Gunnar Asplund (1885–1940) realized his Grand Tour to Italy. He visited Agrigento, Palermo, Taormina, Pompeii, Rome and Ravenna among other places in 1913–14. Instead of solely focusing on the buildings, Asplund carefully has described the atmosphere of the country in words and pictures in his sketchbooks from his journey. He draws and writes about the black velvet sky, the shining stars, the blazing sun, the deep blue sea, the reddish earth, the coloured lanterns. Thus, the study takes into account moods, colours and light in the Mediterranean culture, in urban and private rooms and in space between. Asplund describes colour both as visual and tactile, in terms of material and surface character.

These sensuous qualities are apparently tangible on location, but are they possible to transfer to the physical architecture to be built in the cold North? During his Italian tour Asplund was not primarily thinking of how to use his impressions professionally.

Nevertheless, in his future projects, he made use of his Italian recollections. After his journey, Asplund soon discovered the importance of a strong relationship between landscape and buildings, and the meeting between architecture and everyday folk life. Some examples are the Bologna-red colour on the facade of the Stockholm City Library, and the atmosphere in the children's story reading room created as a mini amphitheatre inside the library. The starry night sky and the carnival atmosphere in the Skandia cinema are likely reminiscences of Italian nights. One focus in the study is the antique colours, ornaments and motifs seen in the Pompeii buildings and in the Houses of Livia and Augustus in Rome. Later transformed by Asplund into the Skandia cinema and in the Stockholm City Library. A tradition transferred into a new context and a new culture.

Session 8: Perception and color

PSYCHOLOGICAL AND PERCEPTUAL COLOR ASPECTS. INDIVIDUAL AND COLLECTIVE VISION

DE LUCAS Tron, Alfonso
FACULTAD DE ESTUDIOS SUPERIORES ACATLÁN,
UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO

ABSTRACT

A pesar de que la visión se desarrolla dentro de un proceso complicado ésta puede englobarse en dos etapas principales: la sensorial que se refiere al estímulo que llega a los ojos por medio de la luz y la subjetiva que al cerrar el ciclo, proporciona a la imagen forma y contenido. En su conjunto, a este proceso se le conoce como sensopercepción y es importante porque es lo que permite apreciar la exuberante coloración del mundo visual. Tomando en cuenta que de ambas etapas, la más importante es la que corresponde al proceso y producto psíquico, es propósito de este trabajo hacer una distinción entre una manera de *ver* más personal y propia de cada individuo, comparada con una *mirada* colectiva que tienen el común de las personas. Esta distinción pocas veces se toma en cuenta por la cualidad de la percepción de organizar el conjunto de actividades mentales en una unidad sólida y coherente denominada Gestalt. Las precisiones entre lo individual que corresponden más al campo psicológico y lo colectivo, más afín al campo perceptual, son importantes para el estudio del color porque delimitan áreas de estudio, considerando que el primer enfoque, aborda el contenido y significado del color, en tanto que en el segundo, estudia el color de acuerdo una energía no intencional que se lleva a cabo en el momento mismo en que se mira y que se apega a determinados principios o leyes que determinan que se vea una coloración diferente de la que corresponde a la realidad.

A COMPARISON ON EFFECTS OF ART EDUCATION DURING CHILDHOOD ON INTERIOR COLOR PREFERENCE ACROSS CULTURES

BANIANI, Mahshid¹; YAMAMOTO, Sari²

¹ Doctoral Program in Art and Design, University of Tsukuba, Japan

² Faculty of Art and Design, University of Tsukuba, Japan

ABSTRACT

In this research, we clearly identify the effect of creative education on bedroom color preference. This was done between 124 Japanese students and 136 foreign students in Japan. The respondents in each category were further divided into 2 groups (Japanese I and Japanese II, Foreigner I and Foreigner II) randomly. The experiment was consisted of (1) bedroom drawing (2) respondents were shown 56 bedroom samples (colorful samples to Japanese I and Foreigner I, black and white samples to Japanese II, and Foreigner II) (3) same bedroom drawing, and (4) a questionnaire. It was observed that foreigners used more number of color varieties compared to Japanese subjects ($P < 0.05$). However, the respondents (both Japanese and foreigners) whom saw colorful samples tended to use more colors in their second drawing ($P < 0.05$). Additionally, the strong correlation between environment and number of color varieties was observed ($P < 0.05$). Creative activities ($P < 0.05$), group works ($P < 0.01$), being able to draw/imagine freely ($P < 0.05$), seeing samples during childhood ($P < 0.05$), visiting museums ($P < 0.05$) and going to art schools ($P < 0.05$) all had a positive correlation with number of color varieties. Overall, the influence of the samples, and the strong correlation between creative arts education and number of color varieties was observed.

Session 9: Education and color

DRAWINGS AND COLORS. WHAT BLIND CHILDREN CAN/ SHOULD LEARN ABOUT THIS?

BATEZAT Duarte, Maria Lúcia
UDESC/SC/BR

ABSTRACT

Blind children can produce and read drawings when they are made with raised- lines. The learning of drawing since childhood facilitates blind people's access to visual images appearances. However, what type of drawing should we teach to blind children? What type of drawing/design can make visual communication accessible to blind people? How and why to teach colors to blind children?

These are the questions that will be presented and discussed in the article that is being proposed. To this end, some conceptions will be formulated by means of a pathway that involves: 1) theoretical principles of cognitive psychology related to cognitive categories and the fundamental formal properties of objects; 2) theoretical principles originating in neuroscience about multimodal processes and the importance of the formal configuration of objects for the construction of cognitive categories and semantic conceptions; 3) theoretical principles deriving from theories about children's drawings and their genesis; 4) results obtained in field investigations with blind people and the the relationship between object, shape, color and culture.

The main discussion will be based on the conception of "cognitive levels", proposed by Eleanor Rosch (1973, 1978; on the "formal properties of objects", conceived from the arguments of Jean-François Richard (2004); and on the universal character of some graphic schemes made by children at the beginning of their drawing experiences. I intend to show that general schemes (prototypes) are capable of successfully representing an entire cognitive category. These generalizing schemes – drawing with clean lines and simple colors - could be adopted in information design, and when made with raised lines, they might be apprehended by blind people; thus, they, too, would be able to use this kind of communication.

THE LIGHT AT THE END OF THE TUNNEL

COHEN, Marcia

Professor, SCAD Atlanta

(Savannah College of Art and Design)

ABSTRACT

Referencing masterworks from art historical sources is a time-honored process of color discovery for both the student and the mature artist. More compelling, for the student, is to recognize a parallel with art history and the cultural and social differences and similarities with our present-day moment. To explore this, for color study, I developed a project entitled, "Light at the End of the Tunnel." My slide presentation will outline the technical, conceptual and optical wonderment of this project as well as the students' studio practice and the projects evolution. Using basic principles of optical mixing and the study of the iconic works of artists like George Seurat (1859-1891) and Chuck Close (b.1940), students were also introduced to the Victorian amusement know as the "perspective theater." This tabletop device constructed in layers of cardboard demonstrated scenes of remarkable depth when viewed from a fixed vantage point. This structure became the prototype for the tunnel book construction used in this color project. To enhance the novelty and conceptual complexity of this exercise, the historic green space in downtown Atlanta known as "Piedmont Park" was the setting for our project. Seurat 's Neo-Impressionist masterwork *A Sunday Afternoon on the Island of La Grande Jatte* (1884) was used as a departure point for compositional analysis and color examination. Like Seurat's social commentary on Parisian society, students worked to capture the present moment using this public park to focus on the people and their activities in this popular urban setting. An analysis of local color was revealed in a variety of ways: as seasonal color, light and atmospheric perspective and a flair for observing people and their interconnectedness to the park as a place for recreation and rendezvous' ...both real and imagined.

Session 9: Education and color

CREATIVE DIGITAL COLOR CAPTURE

MURCIA Melo, Bayardo
LCI BOGOTA - LA SALLE COLLEGE

ABSTRACT

La experiencia desarrollada por más de 13 años en la docencia universitaria y los conocimientos adquiridos en la formación profesional como diseñador gráfico y fotógrafo con experiencia en impresión y sumado al cambio de las imágenes de lo análogo al digital me ha llevado por años a experimentar con el color desde su percepción cognitiva, psicológica, artística, y técnica al servicio de la tecnología de captura digital.

Esta ponencia se preparó con el objetivo de sensibilizar a los participantes sobre el cambio que genera la utilización y manipulación del color en la fotografía digital desde el proceso de preproducción, la captura y la manipulación de los pixeles que mas que información de luz llevan información de color.

6 años de experimentación con el color análogo en película y hoy en digital, despliegan un abanico inmenso de posibilidades de expresión desde lo cotidiano, lo educativo, lo artístico y lo comercial, el proceso coloca el color como código de comunicación en el contexto de la Sociedad de la Información así pues los scanners y cámaras digitales junto a los procesos de captura y manipulación del espectro visible en la toma fotográfica, me han servido para desarrollar, como proyectos de trabajo académico, experimentaciones con la captura del color fusionando la técnica, la tecnología, la preproducción y posproducción fotográfica, generando resultados alternos a la fotografía convencional y la forma como interpretamos y entendemos el color; más aun cuando se realiza desde la captura de las imágenes y no desde los programas de edición digital de imágenes .

La fluidez de las imágenes digitales de hoy, su captura, proceso y salida, el análisis del discurso creativo en cada fase, nunca fueron tan rápidos, ni tan tecnológicos, esto da como resultado un amplio espectro de posibilidades de manipulación del color incluso antes de su captura.

Con trabajos fotográficos de estudio y de campo, se centramos en manipular el color desde la preproducción, disparando imágenes pensando en el resultado final y gratamente sorprendernos con una dimensión poco explorada y que da al artista de la fotografía otro lenguaje donde la luz para la fotografía esta al mismo nivel que el color.

A MULTIDISCIPLINARY MODEL FOR TEACHING COLOR

KWALLEK, Nancy
The University of Texas at Austin
School of Architecture. Interior Design
Austin, Texas, USA

ABSTRACT

This presentation covers a multidisciplinary course '*LIVING COLOR*' on teaching the RGBs of color in a unique way at a major university. The course was developed to fit the goals of the university's recently reformed undergraduate curriculum: 1) It allows new students to have a shared academic experience at the beginning of their undergraduate career and exposes them to broad, complex subject matter (in this case, color) across different disciplines before students are pigeon-holed into their specialized majors remaining in their academic career; 2) It also attempts to humanize the learning experience for first year students by creating a small class atmosphere led by experienced professors in contrast to huge first year lecture courses taught by teaching assistants. The major purpose of *LIVING COLOR* is to facilitate students to investigate and experience the role and place of color as a dynamic phenomenon permeating our daily lives. Not only does *LIVING COLOR* introduce students to color through culture, art, science, and architecture, it also helps students engage in the use of color through several hands-on projects. A highlight of community involvement for the class was a project that involved the community. Students focused on a multi-cultural approach to study color by utilizing the mandala of eastern cultures to create a non-conventional color wheel. They used produce—food—to create a Harvest Mandala color wheel. The food was then donated to the Central Texas Food Bank for the needy. The project fulfilled the university's request for faculty to incorporate a community service activity.

COMPARISON OF FLUORESCENT COLOR PERCEPTION USING REAL OBJECTS AND LCD MONITOR

Keita HIRAI, Mika YAMAGUCHI, Takahiko HORIUCHI, Shoji TOMINAGA
Graduate School of Advanced Integration Science, Chiba University

ABSTRACT

Through subjective experiments, the perception of fluorescent colors displayed on an LCD monitor was compared to the colors of real fluorescent objects. We conducted these experiments under two different conditions: one with the stimuli seen through a window and the other without a window. In the experiment using a window, observers could not recognize whether the target color was a display color or a real object color when they looked at the stimuli through the window. Alternatively, in the experiment without a window, the observers could distinguish between displayed color and real object color. The observers evaluated the "sense of fluorescence" in the presented color stimuli based on the magnitude estimation method. We prepared twelve stimuli showing fluorescent colors of real objects. In addition, we employed twelve color stimuli displayed on a calibrated LCD monitor. Hence, the observers evaluated twenty-four color stimuli in all. The results in the case of the experiment using a window showed that the "sense of fluorescence" in the displayed color was almost the same as that of the real object color. In contrast, in the case of the experiment without a window, the "sense of fluorescence" in the displayed color was significantly less than that of the real object color.

COLOUR INFLUENCE ON USER'S MOTIVATION TO PRESS INPUT BUTTON, AND COMPARISON WITH VISUAL ATTRACTION

Daisuke NISHIYAMA, Hyojin JUNG, Saori KITAGUCHI, Tetsuya SATO
Kyoto Institute of Technology

ABSTRACT

Since users of touch screen type of information appliances are growing, the graphic design of displayed page is important as visual communication. Pressing an input button by user is an executive command to the device, thus design of input button could affect user's motivation.

The aim of this study is to understand the colour influence on user's motivation to press an input button on touch screen equipment. An experiment was conducted using mobile equipment, iPad mini of Apple Inc. which is operated through touch screen by 30 Japanese university students, 15 male and 15 female students. 64 input button colours consisted of 12 hues by 5 colour tones and 4 neutral colours on the screen. Middle grey was used as a background colour for the colour buttons, and all of 64 buttons were arranged on the screen. The subjects were asked to press colour buttons by their finger doing to scroll the screen by themselves. The number restrictions pressing buttons to the subjects was 5. In addition, the subjects were asked to select colour buttons having higher visual attraction as well.

The motivation level to press of each colour button is calculated based on the frequency of pressing a button. The obtained results indicated that there was tendency for pressing an input button within the subjects. There was some correlation between button's colour properties and the motivation level. On the other hand, the visual attraction level of each colour button is calculated based on the frequency of selecting a button. The colour influence on motivation to press input buttons was compared with the visual attraction to input buttons. The colour tendency for pressing an input button is larger than that of the visual attraction.

Session 11: Color impact on people

THE TRANSFORMATIVE IMPACT OF IMAGE BY COLOUR ON VULNERABLE PEOPLE

CHAGOYA Rodriguez, Maria Elena
Asociacion Mexicana de Investigadores del Color

ABSTRACT

Image consulting has been directed to an elite society: models, executives, politicians and celebrities following the advice of an expert to development their image. The fashion, brands and camouflage indicate an image of success and status. But, is this consultation only for high society status?

Image by Colour has helped emotionally vulnerable people, victims of discrimination, domestic violence or bullying:

- Insecure teenagers with eating disorders.
- Women with emotional or physical hurts, whose self-worth was very low.
- Refugees to start a new life that need to feel validated.
- Patients and their caregivers that disease had reduced their physical image.
- International brilliant students, victims of bullying because they are not like locals.

The impact of colour has immediate, real and lasting effects. It enhances our silhouette, skin's radiance, and the gleam in our eyes.

This influences from the first contact, the impression others have of us.

In my presentation I will show the excellent results in this sector of the population: Vulnerable women and men have developed respecting their diversity a genuine and harmonious image. They learn to discover how by using their friendly colours and how to combine them according to their harmony and occasion, it is much more than just look better. It enhances their total appearance. The colour was found to be a humble and easy tool to emphasize their confidence, self-esteem, revalue their recognition, respect and also they look happy.

The work was developed in team, combining 30 years of my experience with the support of Multicultural Council of Tasmania , Migrant Resort Centre, Latrobe University in Melbourne and Tasmania University, associations of disability support, people with cancer and their careers and women with bulimia and affected by family violence.

STUDY ON BRAIN WAVES IN COLOR SPACES IN LINE WITH PERSONALITY TYPES

LEE HeeWon¹, LEE Jinsook², KIM Hanna¹, RYU Jiseon³

¹ Doctor Course, Dept. of Architectural Engineering, CNU, Korea

² Doctor, Dept. of Architectural Engineering, CNU, Korea

³ Professor, Dept. of Architectural Engineering, Chungnam National University, Korea

ABSTRACT

The rapid development of brain science has led to many studies that utilize brain waves for various fields, especially education and academic achievement. Brain waves are also found in studies on personality types of individuals.

Although some studies measured brain waves in line with personality, there is practically no study that measured brain waves on a life-size mock-up in color spaces. Thus, this study is aimed at comparatively analyzing the characteristics of brain waves in color spaces with a life-size mock-up by personality type, using MBTI that can explain the individual differences in preferences; MBTI is a personality type test used most extensively that helps identify personality types.

To accomplish the objectives, the characteristics of brain waves in color spaces were examined in line with personality types of adults in their 20s-30s. The research methods are as follows. 1) MBTI personality type test was conducted on four adults in their 20s-30s. 2) A life-size mock-up of 100mm was installed in white, blue, green, and red spaces of 1500mm×1500mm×2400mm. The lighting equipment was D65 standard light source of 600mm×600mm. 3) Brain waves were measured after connecting electrodes to prefrontal lobe, frontal lobe, parietal lobe, occipital lobe, and the left and right earlobes, using 10%-20% international standard electrode attachment method. 4) The brain waves characteristics were comparatively analyzed in line with personality types in blue, green, and red spaces as white as the standard.

The findings revealed there were small differences in brain wave indicators in the color spaces in line with personality types; it indicates that personality has an effect on brain waves. To generalize the findings, a follow-up study will be conducted with more participants. Also, the gender, number of participants, and age groups need to be increased in follow-up studies.

Session 11: Color impact on people

WHAT COLORS DO CHILDREN PREFER IN ORDER TO EXPRESS VIOLENCE? A CASE STUDY IN BUENOS AIRES, ARGENTINA

LÓPEZ, Mabel Amanda

Color Research Program, School of Architecture, Design and Urbanismo,
University of Buenos Aires, Argentina

ABSTRACT

This presentation is framed within the research project "Rhetoric of children's graphic violence. A semiotic analysis of drawings made by school children", carried out at Buenos Aires University in collaboration with researchers from the National Autonomous University of Mexico. I will show the findings from a survey made in schools of Buenos Aires city, focusing on the use of color in the representation of violence and non-violence in a corpus of 200 drawings. The sample includes 100 subjects: school children aged 11 who are told to make 2 drawings, a violent and a non-violent one. Among the aims of the research, there is the identification and inventory of the colors used by children to render violence and non-violence visible. Colors will be related with objects, symbols and scenes depicted, and with a questionnaire answered by the children. Our questions are: How do they represent violence? Which colors do they use to represent it? Is it the realistic employ of color that predominates in the characters and objects depicted or, instead, there are rhetoric disruptions that show the color of violence in a symbolic way? According to our observations, there is a constant in the use of black to express death, and red to represent blood in wounds; they are chromatic signs already codified in the culture. However, the senses attributed to these and other colors should be recreated by means of the interpretative analysis of each case, and as a function of the iconography and the dramatized account, in order to reach the full meaning. The drawings may be elements for a diagnosis, in order to determine the degree of violence in which the child lives in his daily life and social environment, mediated by the information nets. In parallel, we can follow the tracks of codification in the graphic expressions of children: figures, strokes and colors express symbolic forms with which violence is represented in each culture.

LEDS AND COLOR IN RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL

IXTAINA, Pablo; MENDIBURU, Alejandro

Laboratorio de Acústica y Luminotecnia de la Comisión de Investigaciones Científicas
de la Provincia de Buenos Aires LAL CIC

ABSTRACT

The quick improvement of Light-Emitting Diode (Led) lighting characteristics has generated an important led technology diffusion in domestic and indoor lighting. The led lighting new tendency includes public lighting, road lighting and vehicle lights in a near future. The mixture of a blue or violet junction and the secondary emission of a phosphorated filter produces a white light spectral distribution in led sources used for lighting. This "white light" produces a particular color perception of the illuminated objects, different from day light or vehicle light (halogen incandescent) perception. This paper studies the color reproduction of traffic control retroreflective materials when led lighting is used. CIE 1931 chromatic coordinates of retroreflectives sheets of several manufacturers and all standardized colors were measured, under standardized lighting and observation geometry (0/45 geometry). Four led sources used in road lighting were studied. In the same way, the samples were measured in "daylight" condition (using a CIE D65 illuminant simulation) and "nightlight" condition (under CIE type A illuminant). Although the four led sources used were equivalent (CRI>90, "cool light"), the results showed a large dispersion in their chromatic reproduction. On the other hand, colors reproduced by led resulted less saturated than daylight reproduction. Tone loss effect was observed, especially in red. This change could generate confusion in signal inter-pretation. As a conclusion, this paper points out the importance of including led light specification and color limits in the standards.

COLOR NAMING OF DEUTRANOMALS LARGELY INFLUENCED BY LUMINANCE AND SIZE OF LIGHT

Yoko MIZOKAMI, Saeko OISHI and Hirohisa YAGUCHI
Graduate School of Advanced Integration Science, Chiba University

ABSTRACT

Color light is widely used in our daily life. The recent development of Light-Emitting Diode (LED) light facilitates the production of light with various color, luminance, and size. People with color vision deficiency, however, could have difficulty in recognizing the color of light depending on the combination of those color, size and luminance. We investigated how the color appearance of LED light was influenced by its size and luminance for deuteranomalous and color normal observers. Test stimulus was a mixture of light consisted of a red, a green and a blue LED. We tested those stimuli with a wide range of luminance levels and two visual angles. In the experiment, a circle stimulus with different color was presented one by one. Observers evaluated the color of the stimulus each time using a color naming method, which they answered up to three most intense colors from six color names. Our results show that the color naming of deuteranomalous changes dramatically depending on luminance level and the luminance dependency is stronger for smaller stimulus, whereas those of color normal observers changes a little. The manner of color shift suggests that the Bezold-Brücke effect is stronger for deuteranomalous. A selection of size and luminance level in color light is important for a color sign recognizable to people with color vision deficiency.

RETRIEVING COLORS, MATERIALS AND LIGHTING OF THE ROYAUMONT ABBEY CHURCH IN THE XIIITH CENTURY USING HYPERSPECTRAL SIMULATION

Patrick CALLET¹, Rémi CERISE², Xavier SCHIETTECATTE¹,
Jérôme JOHSON³, Nathalie LE GONIDEC³

¹ Ecole Centrale Paris, Centre Français de la Couleur and Mines-ParisTech, France

² Centre Français de la Couleur, France

³ Fondation Royaumont, France

ABSTRACT

Ten years ago we started a study on the remains of polychromy observed on a medieval sculpture displayed in Saint Denis Basilica, the royal necropolis of France, close to Paris. The study concerned the recumbent of Philippe Dagobert (1222-1235), young brother of king Saint Louis (1214-1270) which offers today a good state of conservation in its shape, mainly on the principal sculpture figuring the young man. From observations and analyses made on the authorized very tiny scales of paints we obtained a set of hypothetical colors and materials used in the first version of the sculpture, in the XIIIth century. This funeral monument is today in Saint-Denis Basilica but was until the French Revolution exhibited in the Royaumont abbey church. Only a very small part of the church remains today of the royal construction offered to the monks of the cistercian order. Texts, drawings, takings, analyses and observations in SEM, spectrophotometric measurements on the remains of multi-layered paints, physical samples of paints prepared with medieval pigments, etc. permit to define what we supposed the original program of polychromy was. What the natural lighting in the cistercian church was 8 centuries ago? Where exactly was disposed the funeral monument? We proposed a 3D plausible vision of the whole church with a corrected natural lighting. Due the precession of the equinoxes, the direct solar lighting of today for the same date is not identical to the medieval one. The cistercian church seems to be unexpected as the cistercian monks had to accept the magnificence of the whole set of funeral sculptures of the king's family. The presented study then permits to retrieve the location of the recumbent of Philippe Dagobert. Placed inside the Royaumont church with correct natural lighting, glazed pavement decoration, with white wall lime-coated was then proposed. Computed images and a short movie obtained by hyperspectral simulation will be presented, showing all the aspects of such a reconstruction with a high symbolism of light.

A STUDY ON THE APPROPRIATE LED ILLUMINANCE AND COLOR TEMPERATURE FOR KOREAN FOOD

PARK, Jiyoung; SEO, Eunji; LEE, Jinsook
Chungnam National University

ABSTRACT

Externally, Korean food considers the composition and arrangement of colors, while internally it reflects the idea of yin-yang and the Five Elements and East Asian philosophy. The five cardinal colors of red, green, yellow, white, and black, which are based on the ideal signification grounded on the meaning and symbolism of the colors, are applied in the various areas of architecture, folk paintings, and costume and reenacted in today's table setting.

In Korean cuisine, a single table includes several dishes such as cooked rice, soup, kimchi, herbs, and grilled fish. The served food pieces come in the odd numbers of 3, 5, 7, and 9 in color arrangement, and even same food pieces coming on one single dish are to create a harmony among different colors. Also, dining table setting is classified into 3-dish, 5-dish, 7-dish, and 9-dish according to the number of side dishes included.

In this study, I identified the appropriate brightness for the dining table and the scope of illuminance and color temperature in which food looked delicious.

The analysis shows that brightness is appropriate at the illuminance of 200 lx for all color temperatures. The experiment shows that the food looks delicious at 3,500-5,000 K and 150-300 lx, while it looks the most delicious at 4,000 K and 200-300 lx.

WHAT IS THE BEST KIND OF LIGHTING FOR HERITAGE ART REPRODUCTION?

ALVARADO Tapia, Ricardo
Instituto de Investigaciones Estéticas, UNAM

ABSTRACT

Con el objetivo de saber cual de los tres tipos de iluminación más comunes en fotografía: luz fluorescente, luz incandescente y luz de destello, es el más adecuado en la reproducción de obras de arte patrimoniales, se diseñó y realizó un experimento para conocer algunas de sus características cuantitativas y cualitativas: temperatura de color correlativa, índice de reproducción cromática, iluminante estándar correlacionado, curva de distribución en el espectro electromagnético y su relación con la variación de distancia, intensidad y el uso de accesorios.

La información fue interpretada y analizada, en las comparaciones se encontraron diferencias importantes entre cada una de las unidades de experimentación. Se logró la caracterización de cada sistema y se determinó el más adecuado para la reproducción del color y por lo tanto de las obras patrimoniales.

RECOVERY OF METAMERIC BLACKS FROM CIE TRISTIMULUS VALUES USING A COMBINED SYSTEM OF ARTIFICIAL NEURAL NETWORK/SPECTRAL DECOMPOSITION THEORY

Keivan ANSARI¹, Siamak MORADIAN²

¹ Department of Color Imaging and Color Image Processing, Institute for Color Science

² Center of Excellence for Color Science and Technology, Tehran, IRAN

ABSTRACT

Information regarding the spectral reflectance of a colored sample is useful in many applications. Classically, linear models have been used for prediction of the spectral reflectance from the corresponding color coordinates of samples under a given condition of lighting and observer combination. A new algorithm is presented for the recovery of spectral reflectance data from color tristimulus values of a color set. The well-known spectral decomposition theory was employed to decompose each measured reflectance into its fundamental color stimulus (R_{FCS}) and its metameric black component (R_{MB}). The performance were tested on the known measured reflectance curves (R) of 1269 Munsell matt color chips. The measured reflectance curves (R) of all the chips were converted to the fundamental color stimulus (R_{FCS}) and metameric black component (R_{MB}) by the use of matrix R of the spectral decomposition theory for EE/10° illuminant / observer combination. Then a combined neural networks/ spectral decomposition theory procedure was used to recalculate and predict the metameric black component (R_{mb}) of each fundamental color stimulus (R_{FCS}) in order to reconstruct the reflectance from the corresponding tristimulus values.

The root means square errors between the reconstructed and actual reflectance's, the goodness fitting coefficients and finally the color difference values under four different illuminants were used as criteria to test the performance of the novel recovery method. These results show a significant improvement in the attained recovery of the spectral reflectance compared to the classical method based on principle component analysis.

THERE ARE COLOURS THAT KISS US: BEAUTY AS A FACTOR OF SUSTAINABILITY

SOARES, Helena Teresa
Faculdade de Arquitectura da Universidade de Lisboa

ABSTRACT

Though beauty is a deep part of our emotional lives, seldom do Westerners treat it as a value which is fundamental and basic to the structure and order of reality, rather undervaluing its connection to sustainability. During the last two hundred years, modern West has abandoned beauty, defending instead the economy as the final value. The void left by the absence of beauty has been filled by a relentless greed, and until beauty comes back again to the forefront of our cultural life, there can be no real change in the ecological paradigm. But for several years now, scientific reductionism seems to gradually give way to interdependent relationalities, where subject and object are not separated, and everything is relative and exists in a dynamic flow. This article has as main aim to reflect on the role of light and colour in architecture and design, reintroducing the idea of beauty in the discussion on sustainability. In fact, the word beauty, often considered superficial, subjective and even unethical, seems to have lost some of its meaning but, according to Satish Kumar, beauty arises as a consequence of truth and goodness. With this assumption, we analyze case studies and reflect on the importance of language and symbolism of light and colour in the construction of beauty, which is the first criterion for a project. Beauty, being both objective and subjective, can not be reduced to an idea, to something that exists on the surface of the objects to be seen, but instead should be regarded as a way of life. In this perspective, resounding in the depths of being, the trinity formed by beauty, truth and goodness, uniting subject and object, transcends dualism and transports us to a sacred universe, thus creating the conditions for true sustainability.

Session 13: Uses and meanings

WHAT ARE THE COLORS OF ANIMALS? A STUDY TO KNOW THE COLORS THAT CHILDREN CHOOSE TO COLOR DRAWINGS IN SCHOOL CONTEXT

PIEKAS, Mari Ines

UDESC – Universidade do Estado de Santa Catarina - Brazil

ABSTRACT

This article is part of a research that investigates the application of the elements of visual language in tactile perception and cognition in the context of blindness. The aim of the research is to contribute to promotion of interaction, communication and learning of congenital blind children through teach how to draw. The study of color is one of the elements of visual language and together with draw it is part of this education proposal. Research under this heading means the color as a code that is shared by children in the sociocultural and educational context to which they belong, and in that sense, the teaching of color is relevant to blind children. For the research it was sought the theoretical foundation in reflections resulting from Color Theory, Theory of Forms and Children's Drawing, and based on this knowledge, a pilot field study will be conducted in mainstream schools, where visual children will color, according to their understanding, pictograms of animals, which were especially designed for the Pictographic Vocabulary Book for Inclusive Education, which aims to teach draw to children with special educational needs. In the field study it will be possible to collect the representing colors of each animal and that in turn will serve as the basis for teaching colors to blind children.

EL SIGNIFICADO DEL COLOR DENTRO DE LOS RITUALES FÚNEBRES

CUVELIER, Mónica; AGUIRRE, Fausto Enrique
Universidad Autónoma de Ciudad Juárez

ABSTRACT

A lo largo del tiempo, el color ha sido de gran importancia para la humanidad. Se ha utilizado como símbolo de poder, estatus social, ideologías políticas, e incluso ha sido empleado para diferenciar religiones. Por consecuencia, el lenguaje del color es variable de cultura en cultura, recordando que éste, como cualquier medio de expresión, es visualizado como un signo cromático, (significante-significado) dotado de una intrínseca versatilidad polisémica. Partiendo de esto, nuestra investigación tiene como principal objetivo: identificar el significado del color dentro de las ceremonias fúnebres en diferentes culturas y tiempos de la historia. Desde tiempos antiguos el color ha sido empleado como símbolo de vida y de muerte, dentro de la cultura fenicia, se ha destacado que los colores rojo y verde predominaban en la pintura parietal funeraria de las tumbas subterráneas en la región de Sidón. En tiempos contemporáneos dentro de la cultura occidental el color negro se asocia a la oscuridad, al miedo a lo desconocido y por ende, a la muerte, lo putrefacto y todo un amplio cúmulo de asociaciones emotivas negativas: odio, tristeza y depresión. Mientras que, en la cultura oriental como la china, el color blanco es empleado en las ceremonias fúnebres. Dentro del lenguaje del color se advierte que cada cultura y en cada tiempo se ha detectado una variedad muy amplia sobre el uso de dicho lenguaje, estos han respondido ante el reto que supone la traducción en palabras del espectro cromático con múltiples soluciones y grados muy diversos de categorización

EXPERIMENTAL AND CONTEMPORARY APPLICATION OF COLOR FROM PRE-COLUMBUS TEXTILES OF CHILE

DOMPER Rodríguez, María Rosa
Escuela de Diseño, Pontificia Universidad Católica de Chile

ABSTRACT

This research shows the experience of work about an exploration, visualization, observation, comparison, conceptualization and reflection, of a set color codes; as a representational and identity elements of our cultural heritage. The colors used have been detected in the realization of a Chilean research project, in which the researchers identify colors from parts of Pre-Columbian textiles from northern Chile, find in the Chilean Museum of Pre-Columbian Art in Santiago. To the rescue of visual memory, efficient communication and use, in different cultural spaces through contemporary technologies and processes. The experiments were performed with a collection of 35 colors of the total detected, beginning with the mathematical translation of the $L^*a^*b^*$ values obtained by spectrophotometer to RGB codes, in order to display and show the exact value of each hue. Based on these values, the colors are sorted by perceptual HSB color model (Hue - Saturation - Brightness) establishing them in depending of its three properties. This proof the color relations about order and amount presented between them. Were used digital 3D visualizations and infographics. Then colors are arranged in groups and worked with them looking for synaesthetic relationships, degrees of brightness and color distribution. Next we exercise visual sensitivity creating conceptual proposals, in line with the observation of chromatic atmospheres, given by the formulation of schemes, color combinations and harmonies. Finally the colors are applied in contemporary images of graphic, web and object design, using digital chromatic montage, observing brightness degrees and color hierarchy. Experimentation achieves the communication, transmit and disseminate the colorful present in Pre-Columbian Andean textiles, considering it a visual value and cultural heritage and patrimony.

COLORIMETRIC RECORD OF THE PRE-COLUMBIAN TEXTILES FROM THE SOUTHERN COAST OF PERU AS ELEMENT FOR STRENGTHENING NATIONAL IDENTITY IN ARCHAEOLOGY PROJECTS AND DESIGN

MUNIVE Loza, Leila Susan
Universidad San Ignacio de Loyola –Lima, Perú

ABSTRACT

The visual perception of color range plays such an important role in our lives as it is a communication tool and identity trait that man since prehistoric perceived according to its environment, forming part of its history. Peru has a wide variety of cultures over twenty thousand years of history that can be seen in one of the largest networks of archaeology in the world, ancient Peruvians valued the tissues as surfaces transmitting symbolic information, with a wide range of colors that could establish interethnic communications, taking this cultural wealth this country does not have its own palette of color identification system, causing a limited registration of color in archaeological field and conservation field, also provokes an inexact application of color gamut in design projects related to cultural issues for strengthening national identity, so the opportunity to use color as an identity element is wasted. In this project was developed a color register of precolumbian textiles from the southern coast of Peru (Ica), since in this region were found the most important textiles parts of the cultures from Paracas, Nasca y Chincha, with a variety of colors, design and good condition, this will permit define its color characteristics for future application in contemporary projects for archeology, conservation and design, thus contributing to the dissemination and preservation of pre-Columbian textile heritage color, and the strengthening of national identity in issues related to these areas. The end result obtained nearly 500 colors of Paracas, Nasca and Chincha cultures. Also, this project aims to serve as a reference for future investigations of other pre-Columbian cultures, colonial, republican and contemporary in the other regions of Peru.

SUSTAINABILITY AND NATURAL COLOR COTTON IN AMERICA

MUSSO, Maria Luisa
Facultad de Arquitectura, Diseño y Urbanismo,
Universidad de Buenos Aires, Argentina

ABSTRACT

The use of color in textiles has acted as a paradigm as regards attitudes and behavior towards environmental matters over the past decades. During the 1990s a new trend of thought set forward a deeper awareness of the environment in danger. An emphasis on conservation was the most remarkable trend, taking on board themes such as ecology, the protective home, native roots and traditions. Several companies, at first in Europe and the USA, and later throughout the world, began to propose natural color cotton in textiles. The aim of this paper is to present a survey of the development of naturally colored cotton in America, since the ancient pre-Columbian times to nowadays. Colored cotton agriculture began around 2700 BC in India/Pakistan, Egypt, Mexico and Peru. It was then common for cotton to grow in a variety of colors. The Mochica indians in Peru developed an extraordinary palette of natural cotton fiber colors, on the northern coast of Peru. The oldest archaeological evidence in Mexico comes from the site of Tehuacan, 2300 BC. Besides, natural colored cotton was grown from Oaxaca to the south about 5,000 years ago. James M. Vreeland, Jr., at the end of the seventies, found brown cotton fields that indigenous kept in northern Peru. This led him to create in 1982 the Native Cotton Project. Peru Naturtex Partners produce this cotton today. The American Sally Fox rediscovered a small amount of brown cotton seeds in 1982 and spend several years to produce a commercially viable long-fiber colored cotton. She later started her company, Natural Cotton Colors, Inc. Embrapa of Brazil, a pioneer in the development of colored cotton in that country launched its first cultivar in 2000 and more than 30 varieties were produced since then. Native cotton offers important advantages. It requires virtually no maintenance after sowing, no fertilizers, no pesticides. It can grow in arid soils, is more fire-resistant than white cotton. In addition, the dyeing and finishing steps, so detrimental to the environment, can be eliminated. Naturally colored cotton had a significant increase in the textile companies promoting products and services that provide environmental benefits.

GLOBAL COMMUNITIES, SUSTAINABILITY AND BIOTECHNOLOGY – NATURAL DYE RESOURCES IN TEXTILES

SANTOS, Gabriela; CARVALHO, Cristina

CIAUD – Centro de Investigação em Arquitectura, Urbanismo e Design, Universidade de Lisboa

ABSTRACT

Globalization changed the way we view society for the past decades and it presents advantages and disadvantages. Although being global means an increased cultural intertwining or a higher flow of information and social tolerance (as well as the existence of a world market that enables productivity and accessibility), there are also disadvantages related to the loss of cultural identity of certain cultures or sustainable issues that must be addressed.

This new century's challenges and issues are often strongly related to the usage of non-renewable resources and production procedures putting at risk the environment and people's health.

The growing concern over environmental quality and consumers' health has led to a gradual interest of the reintroduction of natural dyes (and preservation of biodiversity) into the fashion and textile design industries as opposed to the current production processes, often characterised as harmful to all ecosystems.

Dyes have been studied in depth for many centuries, contributing to theoretical scientific knowledge, but what are the most significant developments in applied colour research? Through an extensive study on various fields such as Biotechnology History, Ethnography, Biology, Archaeology, amongst many others we gathered information on natural coloured compounds, colour sources (plants, animals and microorganisms), ancient and modern techniques of extraction and application as well as advantages and disadvantages of dyes (natural and synthetic).

This study analyses the evolution of natural dyes and colour throughout the centuries focusing in sustainable processes within the textile industry and the conservation of biodiversity, local production and ancient knowledge. It also reveals that a revival of natural dyes (and ancient/local know how) in addition to new cutting edge technologies (such as biotechnology) allows for an industrial feasibility. Results also indicate significant reduced environmental impact and new strategies for sustainable development regarding colours for textiles.

SISTEMATIZATION OF THE WORK WITH COLOR IN THE INNOVATION PROCESS FOR TRADITIONAL TEXTILE ARTISANS "CHAMANTERAS DE DOÑIHUE", VALLE DEL CACHAPOAL, CHILE

COX Irarrázaval, María de la Paz
School of Design, Pontifical Catholic University of Chile

ABSTRACT

This project has been developed along with a group of traditional textile artisans of the Chilean central zone known as "Chamanteras de Doñihue", who produce remarkable textile pieces from the chromatic point of view, and of great technical complexity. The main piece they produce using a loom is the "chamanto", a basic part of the huaso's (chilean rural worker) traditional outfit, used only in celebrations or other solemn occasions, such as traditional festivities or the rural sport of the country, "rodeo". This textile piece uses great amounts of yarn in its confection, combining different sets of colors, and requires up to four continuous months of work from the weaver. For these reasons, the final product reaches very high prices. The weavers, however, have little access to commercial opportunities for selling their products, mainly because of their isolated rural context. This fact leaves many weavers without a stable income source. The situation described above motivated a process of innovation alongside local authorities, which would incentivize the weavers to produce other types of textile pieces besides "chamantos". The new pieces were to be of less complexity and cost, but without losing neither the traditional chromatic complexity, nor the technical skills transmitted from generations. This project has been developed through a participatory approach between a team of designers, of which I am the color specialist, and the weavers. The work has included diverse productive aspects and the capacitation of the artisans, where color has been a crucial subject in the joint effort of the systematization of the traditional colors and the elaboration of color charts and their latter adjustments for application in the new lines of products. The project is still on going and we expect to have final products for presenting the entire process in October at Oaxaca.

EFFECTS OF SURFACE COLOR ON THE ESTIMATED FRESHNESS OF VEGETABLES

Katsunori OKAJIMA, Yusuke SAKURAI, Carlos ARCE-LOPERA
Yokohama National University

ABSTRACT

Luminance distribution information is a critical cue for estimating visual freshness of vegetables, such as strawberries [Arce-Lopera et al, 2012, *i-Perception*, 3(5), 338–355] and cabbages [Arce-Lopera et al, 2013, *Food Quality and Preference*, 27(2), 202–207]. However, it remains unclear how color affects the freshness estimation of vegetables. Therefore, we conducted two kinds of experiment. They were designed to investigate the effect of the color of vegetables on our visual estimation of fresh vegetables by controlling the image color information. We took calibrated pictures of fresh vegetables: cabbage, carrot and komatsuna (Japanese Mustard Spinach) that gradually degraded in a controlled environment. In Experiment 1, we created gray-scale stimuli of the vegetable surface with the same luminance values as the original color images and derived results of freshness estimation using monochromatic and chromatic stimuli. We found no difference between the results, suggesting that the color does not add critical information for the visual freshness estimation. Moreover, in Experiment 2, we created strange color stimuli of the vegetable surface (e.g. yellow cabbage) with the same luminance values as the original color images. The freshness estimation results showed that visual freshness estimation does not depend on the color of the vegetable surface even when the color does not exist in nature. In spite that color information is an important cue for identifying the type of vegetable and for estimating the ripeness of vegetables, our results suggest that visual freshness estimation is quite robust against color modification.

Session 15: Impacto of color in people II

HISTORICAL AND NEW COLORS IN THE CONSTRUCTION OF IDENTITY: PEOPLE CHOOSES

Elisa CORDERO-JAHR¹, Paloma RAMIS², Beatriz VALENZUELA³

¹ INSTITUTO DE ARQUITECTURA Y URBANISMO, UNIVERSIDAD AUSTRAL DE CHILE

² ASESORÍA PRIVADA EN HISTORIA

³ OFICINA DE ARQUITECTURA 360°

ABSTRACT

Proyecto “Recuperación de Fachadas de calle Estado-Rancagua”

El Ministerio de la Vivienda y Urbanismo del Gobierno de Chile, impulsó el año 2013 un “Plan Piloto Recuperación de Fachadas” para barrios o zonas de ciudades con alto deterioro del espacio público. La Municipalidad de la ciudad de Rancagua acudió a este llamado, presentando un proyecto para la recuperación de las fachadas de 65 propiedades en la calle Estado, con valor patrimonial o paisajístico. Las construcciones presentaban descuido y deterioro por falta de mantención y abundante contaminación visual, de rayados y señalizaciones inadecuados para un eje urbano tan relevante en la historia de Chile. El proyecto que aquí se presenta, se circunscribe al diseño cromático de las fachadas a intervenir, el que incluye todos los elementos arquitectónicos anteriormente mencionados.

BLUE COLOR IN TURKISH CULTURE

DUYAN, Fazıla; GÜLER, Ceyda

Yıldız Technical University, Mimar Sinan Fine Arts University

ABSTRACT

Social culture is formed by material and moral values such as beliefs, norms, objects, behaviours and customs in a community life. This formation evolves under the influence of other communities in the historical process. The one of the major components is color which is used for the expression of values such as architectural style, art and costumes in a social culture.

Throughout history, Turkish Society has existed on a variety of lands from the eastern borders of Asia, through Middle East reaching up to Europe where it has interacted with many different cultures. As in many other cultures, colors in Turkish Culture have been loaded with meanings in the historical process under the scope of religion, geographical conditions, production and political systems. In Gokturks which is one of the first Turkish Societies that was given its name from the Sky God, blue color as the color of sky had a special status in their belief system symbolizing supremacy and greatness. Therefore, it is not a coincidence that Old Turkish States such as Gokturks, Khazars, The Seljugs, and Timurids had preferred blue color as flag color. Turquoise color as in the spectrum of blue is located on the religious beliefs of Turks. After Turks accepted Islam, blue color had been used on the surface of sacred spaces in mosques and shrines. "Blue Mosque" (Sultanahmet Mosque) located in Istanbul as one of the master pieces of the Ottoman Period is an magnificent example of using blue color.

Session 15: Impacto of color in people II

COLOR AUTOBIOGRAPHY EXPLORING PERSONAL EXPERIENCE OF COLOR AND ITS IMPACT ON OUR VALUES

HAGENLOCHER, Esther

University of Oregon, Department of Architecture, Eugene, OR 97403 U.S.A.

ABSTRACT

This paper borrows its title from the “Environmental Autobiography”, an approach employed in the field of Science, which introduced environmental thinking and encouraged us to look at and understand our own experiences, and to formulate preferences and meanings. How do our affinities for color reflect the places that are especially important to us, and the impact they have had on our life? Color is often underestimated as a formative experience, yet it is found everywhere. It can provide us with elegant insights, and offer an integrated approach to the evolution of one’s own culture.

How does color influence us, and how has it contributed to our identity (and how does it continue to do so)? Do we actually stop and think about the effect of color in our daily and professional lives? Does color change the way we act, think, proceed through the day? —does it inform the choices we make? How much do we know about color? What is the impact of our personal relationship to color and how can we understand our own world through the lens of color.

Our earliest, most fundamental connection to color is deeply personal; its imprint affects us throughout life. This paper will reflect on the ways in which our understanding of color has been shaped by and influenced by our own life, by the physical and cultural geography we come from.

Seeing and perceiving color is a sensory experience that depends on different conditions and one’s own awareness. It is a complex process involving physics, psychology, and culture. In order to understand this world, and to recreate/evolve it, we may first study our perception of it. Our comprehension of the power of color is key to this process, in order to know how we may use it, to enrich discourse.

COLOUR PREFERENCE AND COLOUR NAMING IN DICHROMATS AND TRICHROMATS

Julio LILLO¹, Anna FRANKLIN², Leticia ÁLVARO¹, Humberto MOREIRA¹

¹ Facultad de Psicología, Universidad Complutense de Madrid, Spain

² School of Psychology, University of Sussex, United Kingdom

ABSTRACT

Colour preferences and colour naming were investigated in Spanish participants with and without congenital colour vision deficiencies. Thirty two native dichromats (15 protanopes and 17 deuteranopes, all males) and 32 normal trichromats (15 males and 17 females) took part in the study. Participants rated their colour preference for individually presented stimuli, and afterwards were asked to name the stimuli. Stimuli consisted of light, dark and saturated version of 8 hues (Palmer & Schloss 2010). Important differences in preference appeared between trichromats and dichromats (especially for the protanope group). The most salient difference was that, compared with trichromats, dichromats had a significantly stronger preference for yellow and a weaker preference for blue. Preference for reddish and greenish hues did not differ between groups. Several potential explanations for the between groups preference differences were tested in analysis. They included the role of cone-contrast variables (Hurlbert & Ling 2007), colorimetric variables, such as chroma (C*) and lightness (L*), and variables related to dichromats naming performance. It was found that: (1) dichromats preferences were not related to C* and L* values but, there was a significant negative correlation between preferences and colour naming speed for males (normals and dichromats) but not for females.

BASIC COLOUR TERMS (BCTS) USE BY DICHROMATS (PROTANOPES AND DEUTERANOPES) AND RED-GREEN MECHANISM'S RESIDUAL ACTIVITY: CATEGORICAL, TASK, AND WITHIN GROUP DIFFERENCES

Julio LILLO¹, Humberto MOREIRA¹, Leticia ÁLVARO¹, Lilia PRADO-LEÓN²

¹ FACULTAD DE PSICOLOGÍA, UNIVERSIDAD COMPLUTENSE DE MADRID, SPAIN

² CENTRO UNIVERSITARIO DE ARTE, ARQUITECTURA Y DISEÑO, U. DE GUADALAJARA, MÉXICO

ABSTRACT

Two previous publications (Lillo et al. 2014; Moreira et al. 2014) described the results of three groups of people (protanopes, deuteranopes and normal trichromats) differing in their colour perception clinical status. They performed a mapping task in response to a 102 stimuli set (which of these are exemplars of X?) where X took the value of each Spanish BCT. Stimuli size was relatively big (4°) allowing the use of red-green residual activity ($R-G_{res}$ responses). In the actual paper the relevance of this parameter was evaluated for the two dichromat groups at individual level. The main variable used in the evaluation was ΔR^2 , the increase in the proportion of variance explained for each pointing task when using a previously described model (model B, Moreira et al. 2014) that includes a $R-G_{res}$ (its only difference in relation with model A).

Important within groups differences related with $R-G_{res}$ appeared for both dichromat types: (1) Participants better in the mapping task (less errors, more responses like the controls) had bigger ΔR^2 values (2) This variable value was especially important for the BCTs associated to higher ΔR^2 values (for example, green) in the relevant clinical group (protanope or deuteranope). (3) In the CIE $L^*u^*v^*$ space the most useful variable to find differences between the centroids of better and worst observers in the mapping task was u^* .

ASSOCIATION OF MEANING OF PRIMARY COLORS: VARIATION SATURATION AND BRIGHTNESS IN COLLEGE POPULATION

PRADO L., Lilia; ROSALES C., Rosa; IBARRA G., Laura.

Centro Universitario de Arte, Arquitectura y Diseño,
Universidad de Guadalajara, Jalisco, México

ABSTRACT

There are three primary colors (yellow, red and blue) are those that can not be obtained by mixing any other by what are considered absolute. By mixing these pigments all others can be obtained.

It has three dimensions: hue, saturation and lightness which make possible to arrange color systems (Arnheim 1989 in: Meadow and Avila, 2009).

Was also assessed from the psychological aspect, which is not universal, cross-cultural variations exist, investigations like Ortiz (2011) suggest that blue is associated with male and quick unspecified saturation and brightness.

In order to raise awareness of the meaning attributed to the primary colors the research is done by varying saturation and brightness.

They surveyed 3,356 students at the University of Guadalajara metropolitan area, both sexes (51% male, 49% female). To whom were presented with 3 blade with the 3 primary colors (yellow, red and blue) varying in saturation and brightness (light, medium and dark), a sheet with 56 meanings can associate one to three meanings to each color.

The results obtained were: for the yellow (light and dark) attributed the meaning of light, yellow (medium) passivity. The red color in three shades attributed the meaning of love this was 85% of the population. To the blue (light) attributed the meaning of passivity while for the blue (medium and dark) elegance no matter the variation of saturation and brightness.

In this first analysis process can be inferred that no significant powers that are discrepant with other studies, such as the Prado and Avila (2009) are identified, the data were: yellow (light), red (love) and blue (passivity).

Session 17: Arts and contemporary scene

**ACROSS DISCIPLINES, ACROSS CULTURE;
CONTEMPORARY APPROACHES TO TEACHING
COLOR IN THE VISUAL ARTS**

SULLIVAN, Katherine
Department of Art and Art History
Hope College. Holland, Michigan, USA

ABSTRACT

This presentation will explore methodologies and trends in teaching color theory to students of art and design. As a subject of inquiry in the social and natural sciences, cultural studies and the arts, the phenomena of color spans periods and crosses disciplines. From early philosophical and scientific texts such as Aristotle's *de Coloribus* and Newton's *Opticks* to the instructional guides of Munsell, Itten, and Albers, how have conceptions of color (and its importance) impacted curricula and pedagogical approaches to training artists? An established area of investigation in most studio curriculum foundation courses, color is inherently interdisciplinary and global in its scope. This paper will present an evolving model of teaching color that attempts to engage students' varied backgrounds and diverse cultural experiences to present a more nuanced approach to thinking about color in the arts and beyond.

ENCOUNTERS AND AFFINITIES OF LUIS BARRAGÁN WITH JOSEPH ALBERS AND MARK ROTHKO

DURÃO, Maria João

CIAUD-Centro de Investigação em Arquitectura, Urbanismo e Design,
Faculdade de Arquitectura, Universidade de Lisboa

ABSTRACT

“La serenidad es el gran y verdadero antídoto contra la angústia y el temor, y hoy, la habitación del hombre debe propiciarla. En mis proyectos y en mis obras no ha sido otro mi constante afán, pero hay que cuidar que no la ahuyente una indiscriminada paleta de colores.” (Luís Barragán)

Luís Barragán creates spaces that mirror the need for atmospheres of poetic content and reencounter with the “nostalgia of Paradise” in the words of Mircea Eliade. His spaces communicate stillness and intemporality for spiritual enchantment where dialogues between many painters take place, namely those of Orozco, Chucho Reys, Giorgio de Chirico, Anni e Josef Albers, Mathias Goeritz, Johannes Itten and Mark Rothko.

For the purpose of this paper, exploration is made of Luís Barragán’s encounters and affinities with Joseph Albers and Mark Rothko, with the other painters gravitating around this central nucleus. The focus herein is on characterization and comparison among the work of the triad, along multiple chromatic inner connections:

- a) Alchemy of transmutation of colour in its multiple interactions and capacity to maximize the spatial impact- planes of colour and light.
- b) Vehicle for meditation, solitude and spiritual feeling-use of colour with reverence and sense of service.
- c) Unstable identity of colour and illusionary character; communication of colour.
- d) Colour and sight- art of seeing; idea and symbols.
- e) Physical substance of the skin, tactile qualities of the materials and craftsmanship: Barragán’s wall, Albers’s paper, and Rothko’s life-size canvases.
- f) Intimacy of the substance- search for the essence of the media; the ideal formal shapes of square and rectangle.

Session 17: Arts and contemporary scene

PRECONDITIONS OF RESEARCH ON AESTHETIC EXPERIENCE OF COLOUR

KLARÉN, Ulf

SYN-TES - Nordic Interdisciplinary Network on Colour and Light

ABSTRACT

This is an attempt, from an epistemological point of view, to describe preconditions of research on aesthetic experience of colour.

In ancient and medieval philosophy the world has an intrinsic structure that appears as 'harmony' (gr. *harmonia*); 'harmony' reflects the outer cosmos or/and a divine ideal order of the world.

Since the Age of Enlightenment 'harmony' lies in "the eye of the beholder"; it is looked upon as an aspect of the aesthetic experience. Aesthetics is an epistemology and aesthetic experience an overall coherent understanding of the world.

The task of human perception is to make the surrounding world complete, stable and apprehensible. Aesthetic experience fulfils the same purpose. It reflects the perceptual order of the human ecological niche, the way human beings adapt to the world as a whole.

Perceptual adaptation is not only automatic but also dependent on understanding, visual experiences and culturally based aspects. Thus, the experience of harmony is multiple; if, for example, colour harmony means that we feel that colours "fit together" or "hold together", we could expect experiences of colour harmony at several levels of experience simultaneously: when colour combinations follow basic perceptual rules (for example our natural ability of recognizing colour distinctions and colour similarities), when colours correspond with colours of an environment that we are familiar with, or/and, when a colour combination reflects a culturally based meaningfulness (colours of a national flag, heritage colour schemes, etc.).

The complex nature of aesthetic experiences has implications for the possibility of using traditional scientific research methods. Aesthetic experiences are made up of perceptual qualities. They cannot be reduced or separated from their spatial and cultural context and require a holistic approach and a qualitative research methodology. This necessitates Inter-disciplinary studies and calls for common basic perspectives on aims and purpose of colour perception.

COLOR IN ABSTRACT PAINTING IN MÉXICO: UN ACERCAMIENTO A TRAVÉS DE UNA EXPOSICIÓN DE ARTISTAS MUJERES Y LA TECNOLOGÍA

SÁENZ Romero, Inda

Facultad de Psicología, Universidad Nacional Autónoma de México

ABSTRACT

En este trabajo plantearé un acercamiento al color en el arte abstracto en México analizando una exposición recientemente presentada en el Museo de Arte Moderno de la ciudad de México titulada Silencio, rumor y grito. Considero que la obra allí presentada es representativa porque expone obra del acervo del museo desde su inauguración en 1964 a la fecha.

La exposición suscita varias lecturas, la primera, por supuesto es la que hace la curaduría del propio museo al decidir sacar de su bodega una selección de obras abstractas realizadas por artistas mujeres. Respecto al criterio de género, el curador Octavio Avendaño apunta en el texto de sala que la colección del museo cuenta con 2 694 obras, de las cuales 315 únicamente son de mujeres, equivalentes al 11 por ciento del total, señalando que, aun así, el MAM posee la mayor representación de mujeres en acervos públicos en México. La exposición intenta entonces rescatar la presencia de artistas mujeres en general poco representadas en los acervos de museos y por otra parte destacar la importancia de los lenguajes abstractos en este grupo de artistas mexicanas y extranjeras residentes o con un breve paso por nuestro país.

Alrededor de la muestra habría muchos aspectos interesantes por abordar, como por ejemplo la manera en que se ha conformado la colección del museo, en gran parte constituida por donaciones de los propios artistas, la abundante representación de artistas extranjeras o las razones por las cuales pocas veces se exhiben estas obras. Con éstos márgenes, nuestro interés central será realizar una aproximación a las obras de esta selección desde la perspectiva del color: ¿qué nos dice? ¿cuál es su sentido y peso en el lenguaje de las artistas?

Session 17: Arts and contemporary scene

ANALYSIS OF ORANGE COLORS OF NISHIKI-E PRINTINGS

SUZUKI, Takuzi¹; MINEZAKI, Mami²; YATA, Noriko²; MANABE, Yoshitsugu²¹ NATIONAL MUSEUM OF JAPANESE HISTORY / CHIBA UNIVERSITY² CHIBA UNIVERSITY

ABSTRACT

Nishiki-e is Japanese polychrome woodblock print of the Ukiyo-e school that was made from 1760s to 1910s. *Nishiki-e* is one of the leading products of color culture in Japan. Several kinds of colorants are used in *Nishiki-e*. Our interest is to identify these colorants and to reveal an area and a period that each colorant was used.

In our previous work, new vivid red colorants (a kind of aniline dye) that are used on *Nishiki-e* printings in 1860s explosively can be detected by colorimetric analysis and by spectral analysis.

In this work, we tried to capture a change of printing method of orange color. The aim is to examine whether orange used in *Nishiki-e* printings changed in response to the change of red or not. In many *Nishiki-e* printings, orange color was represented by a overprinting of red and yellow.

301 *Nishiki-e* printings made from 1789 to 1905 were analyzed. These printings are owned by the National Museum of Japanese History, and digital images have been taken by a digital imaging system with a color chart since 2003. We developed an automatic color chart extraction and color correction software program from RAW digital images. 1171 color-corrected CIELAB images were successfully made from 1266 images, and 301 printings that printing year is clearly known are chosen.

Orange colors ($40^\circ \leq h \leq 75^\circ$, $C^* \geq 20$) were extracted from every printings, and frequency of use of chroma was visualized as a histogram. It is clearly observed that the use of strong chroma ($C^* \geq 60$) around 1900. This is a unknown orange colorant, not a overprinting of red and yellow. This result said that explosion of usage of new vivid red colorants had no relation to the change of orange color. Analysis of other color (e.g. Green, Purple, Violet, Yellow) is our future work.

CULTURAL TRADITIONS OF COLOR DESIGNING IN URBAN SPACE: THE TOWN-PLANNING PAINTING OF KAZIMIR MALEVICH

GRIBER, Yulia
Smolensk State University

ABSTRACT

Kazimir Malevich is well known as a prominent painter. However, in the vast and diverse content of the literature on his work and life there is no research devoted to his ideas about the town-planning painting. Moreover, there is no study of his influence on traditions of the color design of urban space.

The aim of the study is the description and the systematization of strategies for the color design of urban space of Malevich.

It is supposed, on the one hand, to indicate in the broad historical context the ideas of Malevich how color in urban space functions as an important symbol in town-planning and how a new color 'edition' helps to transform the existing impressions about the social structure, serves as a promotion of some quarters, districts and even towns. It is supposed to show the principles of form and color organization in the Architectons, Planits and architectural painting of Malevich, the principles of suprematism facade coloration, implemented in 1919 in Vitebsk.

On the other hand, an important objective of the study should be the examination of the impact of unique methods (the phenomenon of "matrix", color-structuring of space, etc.) and ideas of Malevich (Architectons, Planits, Spatial Suprematism) on contemporary and the subsequent architectural coloristic. In particular, it is supposed to show the link of ideas and works of Kazimir Malevich to Russian avant-garde projects, the most striking of which have become abstract axonometric composition of geometric solids - Prouns of El Lissitzky. It will be shown how the ideas of Malevich continue to exist in the modern popular culture of the city.

THE CHROMATIC PROJECT AS A PROPOSAL TO REAPPRAISE THE URBAN IMAGE: CO-MANAGEMENT EXPERIENCE BETWEEN THE MUNICIPAL GOVERNMENT AND THE UNIVERSITY

Adriana INCATASCIATO, Inés GIRELLI, Marcelo BALIÁN,
María Marta MARICONDE, Darío SUÁREZ

Institute of Color – Faculty of Architecture, Town Planning and Design
National University of Córdoba

ABSTRACT

The contemporary city is expressed in the building of complex scenarios, and thus inhabitants find it more and more difficult to represent, understand or signify it. In this context, color, textures, cesias and other components of urban language become essential in the structuring of the physical environment and in the construction of memorable spaces.

The traditional perception and familiarity with the public space is replaced by new experiences that bring about new ways of communication and experimentation. It is therefore necessary to recover a coherence principle which allows the construction of a contemporary urban reality and its all-embracing image. (Améndola, 2000).

The public management of towns sets as an objective the search for specific urban instruments with the aim of reinforcing local identity. Within the Institute of Color of the Faculty of Architecture, Town Planning and Design of the National University of Córdoba a proposal is shaped up to reappraise the image of the public space in the micro-area "Center West" in the city of Villa Carlos Paz. The municipal management, with the participation of the university and neighbors, works towards the reappraisal of the image expression of this area, mainly by means of chromatic design of facades and other language components to foster in residents experiences of belonging, remembrances and construction of the sense of urban living.

Concerning this and taking into account the landscape and the architectural, urban, touristic and commercial values that distinguish the hilly village, the chromatic project sets out a palette of colors with a clear aim to contributing to the reinforcement of the area's identity.

In this way, the urban color plays the role of a leading instrument that structures and defines the environment allowing the residents to signify if and in time make it their own.

A STUDY ON SPATIAL PATTERNS AND ENVIRONMENTAL COLOR OF STREET VENDORS IN TAIWAN

Wei-Lun KUO, Tien-Rein LEE, Hirofumi MINAMI, Shin-Wen FANG
Chinese Culture University

ABSTRACT

Los vendedores ambulantes siguen siendo una parte del desarrollo de las ciudades de Taiwán, que coexista con el progreso económico de las personas. Sin embargo, la imagen pública predominante en cuanto a la presencia de vendedores ambulantes es negativo, que consiste en ambientes sucios, el desorden y productos baratos. En realidad, sin embargo, los tipos de vendedores ambulantes van desde legal a ilegal, adecuada a la inadecuada, y de moderno a tradicional, y así sucesivamente. En el proceso de desarrollo urbano, los vendedores ambulantes se asocian a grupos de usuarios específicos y orientaciones espaciales específicas. Debido a que los vendedores ambulantes pertenecen a más de las condiciones económicas "informales", cuando la economía crece que somos capaces de ver el fuerte carácter de la sociedad humana, así como los fenómenos económicos y sociales particulares de ese período de tiempo. Sobre la base de una visión alternativa de los vendedores ambulantes como las experiencias culturales de la vida de la gente de Taiwán, este estudio tiene como objetivo descubrir los patrones espaciales de los vendedores ambulantes y el color del medio ambiente, y para proporcionar una base para el diseño urbano en el contexto de los estilos de vida de Taiwán. En este estudio, utilizamos NCS (Natural Color System) Análisis para el color del medio ambiente. Los objetivos de este estudio son los siguientes, para examinar la relación entre los días de la vida de los ciudadanos y de los patrones espaciales de los vendedores ambulantes, para examinar las diferencias en las funciones espaciales y el color ambiental de los vendedores ambulantes.

FALSE COLOR AND INFRARED IMAGING FOR THE IDENTIFICATION OF PIGMENTS IN PAINTINGS

AGUILAR-TÉLLEZ Dulce María, RUVALCABA-SIL José Luis,
CLAES Pieterjan, RANGEL-CHÁVEZ Isaac
INSTITUTO DE FÍSICA, UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO

ABSTRACT

In the diagnostic study of cultural heritage, non-destructive techniques are preferred above others due to the art-historical and patrimonial value of these artifacts. Within the ANDREAH project we combine strengths from different fields to achieve this goal. In this interdisciplinary research, physicists and chemists work alongside archaeologists and art-historians in a wide range of investigations. Imaging techniques with different types of light can be used as a first study to obtain a general overview of the object. In particular, ultraviolet and infrared lights are common to study paintings and their possible regions of deterioration and grade of conservation and interventions, identification of certain pigments by their fluorescence and contrast in the image, underlying drawings, etc. Hereby, it is possible to record the entire piece at once and observe the behavior and relation between different parts of the composition. The interpretation of the different pigments in normal infrared images is challenging and difficult as the resulted image only consists of grey tones. Therefore, we implemented the procedure of false color infrared images to overcome this problem. Here, the infrared image is inserted in a RGB environment combined with the colors originating from the visible picture. Doing this, it is possible to assign false colors to the infrared image. These colors can then be compared with reference standards and a first identification of the primary pigments can be made. This information is highly valuable for further analytical investigations, such as x-ray fluorescence (XRF), Raman and Infrared spectroscopy. We present our recent results using the false color procedure in the imaging study of painted surfaces, both prehispanic mural paintings and ceramics from Teotihuacan and Las Higueras, Veracruz as well as colonial canvas paintings from the XVIth century.

A NEW METRIC OF IMAGE QUALITY ASSESSMENT FOR STEREOSCOPIC CONTENT

MORENO, Jaime ¹; RIZZI, Alessandro²; FERNANDEZ-MALOIGNE, Christine³

¹Escuela Superior de Ingenieria Mecánica y Eléctrica, Unidad Zacatenco.

Instituto Politécnico Nacional, Adolfo Lopez Mateos Campus, Mexico

² Dipartimento di Informatica, Università degli Studi di Milano, Milano, Italy

³ University of Poitiers, XLIM Laboratory, CNRS JUR 7252, Futuroscope cedex, France

ABSTRACT

Automatic or semi-automatic stereoscopic image quality assessment has arisen due to the recent diffusion of a new generation of stereoscopic technologies and content demand. Thereby, there's a growth in asking for algorithms of Stereoscopic Image Quality Metrics (SIQA). In this paper, we present a method for assessing the stereoscopic image quality, QUALITAS. QUALITAS is grounded on some human visual system features such as contrast sensitivity, effect of disparate image quality in left and right images, and distance perception, which do not depend on the images being tested. QUALITAS is defined in five stages. Instead of averaging individual qualities of the stereo-pair, QUALITAS introduces Contrast Band-Pass Filtering on a wavelet domain at both views, namely our algorithm perceptually weights left and right images depending on certain viewing conditions. This paper includes the comparison of 27 Metrics SIQA proposed by 16 authors, which summarizes the work made in this field in the recent five years, on image database LIVE 3D. Some algorithms can be combined with any 2D/Normal Image Quality Assessments (NIQA), giving as a result that QUALITAS was compared against 221 Metrics. QUALITAS obtained the best results in terms of overall performance of correlation coefficients. We conclude all metrics in SIQA-SET are simple modifications of NIQA, which take into account some extra characteristics from the disparity map (usually depth variances). Instead QUALITAS incorporates disparity masking in addition to divide 3D scenario in two parts: background and foreground planes. Moreover QUALITAS employs a contrast band-pass filtering, so dynamic parameters are considered as observational distance. It includes loss of correlation, luminance and contrast distortion. It takes into account the visual differences between left and right images, employing a penalization depending on their wavelet energy. Thus, the novelty of QUALITAS lies in combining some the best features of stereoscopic image quality assessments.

MULTISPECTRAL IMAGING SYSTEM FOR DETECTION OF SMALL VERTEBRATE FOSSILS

DELPUEYO Español, Xana¹; VILASECA Ricart, Meritxell¹;
FURIÓ, Marc³; PUJOL Ramo, Jaume¹

¹ CENTRE FOR SENSORS, INSTRUMENTS AND SYSTEMS DEVELOPMENT (CD6).
TECHNICAL UNIVERSITY OF CATALONIA (UPC). TERRASSA-BARCELONA, SPAIN.

² INSTITUT CATALÀ DE PALEONTOLOGIA MIQUEL CRUSAFONT (ICP), UNIVERSITAT
AUTÒNOMA DE BARCELONA (UAB). CERDANYOLA DEL VALLÈS-BARCELONA, SPAIN.

ABSTRACT

Paleontology is responsible for the study of the evolution of life on Earth, ancient plants and animals, based on the fossil record. One of the main applications of fossils is dating sedimentary layers, which is nowadays made through the detection and posterior identification of tiny dental or skeletal remains of small mammals included in the sediment. Unfortunately, the task of separation of fossils from sediment is done completely manually, which leads to a waste of time with the subsequent significant economic impact. For this reason, this study proposes a new tool based on a multispectral system for the identification of fossil remains of small mammals and reptiles. The system consists of a 12 bit-depth spectral camera (QImaging QICAM Fast 1394) with a Liquid Crystal Tunable Filter (Varispec filter model #VIS-07-HC-20-1012) which allows the recording of the scene through many spectral bands (from 400 nm to 1000 nm with a 10 nm-step). An ultraviolet-blue light source (SpectraLight III overhead luminaire) is used to enhance the contrast between teeth and bones with respect to the sediment, due to their different spectral features in this region of the electromagnetic spectrum. In this work, we present the methodology followed to setup the whole system and to improve its performance, including the protocol followed in order to select the most suitable spectral bands to detect the fossil remains and the algorithms based on image processing developed to locate them. Several examples of remains from different paleontological excavations from Catalonia are presented in this work. The accuracy of the new developed system is compared to current employed techniques. This new and automated system represents a clear innovation in the field of paleontology, and it will be very helpful to overcome limitations of currently used techniques for fossil record dating.

REAL-TIME SPECTRAL IMAGING SYSTEM USING COMPLEMENTARY COLOR FILTER AND RGB CAMERA

MIWA Ryotaro, MANABE Yoshitsugu, YATA Noriko
Chiba University

ABSTRACT

Spectral Image has spectral information in each pixel. The spectral image becomes important for recording and reproducing exact color information in various fields. Especially digital archiving of cultural asset needs measurement of spectral image. However it is difficult to capture spectral image because of changing color filters, using multiple cameras and so on. If spectral image can be captured by only one camera without changing color filters, we can easy record and reproduce exact color in short time.

This paper proposes a novel spectral imaging system using only one camera without changing color filters with the use of special optical element that can acquire 4 images with different spectral properties in one image. This optical element installs 4 different color filters. As the color filters we use 3 complementary color filters (yellow, cyan and magenta) and a transparent filter. Therefore this proposed system can measure 12 bands information (R, G, B, CR, CG, CB, MR, MG, MB, YR, YG and YB) of the same scene in one shot. A captured image by our proposed system has 4 quarter size images in one image. These quarter images are extracted from the image, and registered position by images captured calibration board with checker pattern. Spectral information is calculated by an estimation matrix of spectral information obtained from an image captured targets with known spectral reflectance in each pixel. Then we can get a spectral image. Our proposed system can acquire one spectral image in one shot, so spectral video image can be captured by this system.

Experimental results show the proposed system could estimate more accurate spectral reflectance than RGB 3 bands and capture spectral images. Moreover the system could capture spectral video image.

INFLUENCE OF COLORS IN THE PERCEPTION OF EMOTIONS

MAFFEI, Simone Thereza Alexandrino¹; DURÃO, Maria João²;
MENEZES, Marizilda dos Santos¹

¹ Programa de Pós-Graduação em Design, Faculdade de Arquitetura, Artes e Comunicação da Universidade Estadual Paulista "Julio de Mesquita Filho"

² CIAUD - Centro de Investigação em Arquitectura, Urbanismo e Design, Faculdade de Arquitectura, Universidade de Lisboa

ABSTRACT

Several fields of colour study show that each colour has a meaning and causes a feeling, or a set of feelings, on the observer. Colours influence our reasoning and corresponding actions. We state that colours are agents of the relationship between perception and emotion. It is established knowledge that emotional responses are more intense to certain stimuli. From the viewpoint of the interpretation of emotions, this statement triggers the following question: what is the relationship between colour and an emotional perception? This question arose during the preparation of the practical component of the research integrated in the doctoral thesis under development by the main author of this paper and its supervisors. Using a set of shopping window as focal stimulus, the research techniques adopted encompass cross-analysis of emotional responses obtained through observational techniques as well as surveys. At a certain stage, the respondents are asked about the perceived emotion when there is a prevalence of a certain colour. We hypothesized that emotional response varies according to the colour that predominates in the environment, whether in the significance of the situation, whether in intensity. To confirm or reject this hypothesis, a field test was carried out that runs parallel to the thesis. The field test uses illustrations of facial expressions that were inserted in seven frames with seven different colours. The survey is based on issues about the perceived emotion in each illustration, the relationship between the seven colours and emotion, as well as the relationship between the intensity of seven colours with every emotion dealt in the illustrations. The group of respondents include Brazilians and Portuguese, which generates cross-cultural data on multiple relationships. This test corroborates the results obtained in the research field of colour and emotion developed within the larger universe of design research.

AN INVESTIGATION OF THE APPEARANCE HARMONY OF MATERIALS

TANAKA, Midori; HORIUCHI, Takahiko
Graduate School of Advanced Integration Science,
Chiba University, Japan

ABSTRACT

Color harmony has long been of interest to researchers in different fields who design the colors of various objects. When sensing harmony among actual objects, not only the harmony among the colors but also the appearance of harmony of the materials is an important consideration. In the present study, we investigated the appearance of harmony of various materials by conducting psychophysical experiments to collect quantitative data. In our experiments, we prepared 30 samples of 50 mm x 50 mm square pieces made from the following real materials: fabric, paper, stone, wood, leather, metal, plastic, glass, rubber, cork, and tile. In order to help subjects distinguish color harmony, we provided samples with a grayish color except for the brownish-colored wood materials. The material samples generated 435 round-robin pairs that were arbitrary coupled and presented to the subjects, two samples at a time. Each pair was arranged horizontally in a viewing booth under an illuminant D65. Two experiments were conducted. In the first experiment, samples were placed such that their surfaces and the viewing direction became perpendicular to the subject. In the second experiment, the subjects were allowed to tilt the pair of samples to provide a comprehensive judgment of harmony, based on the reflectance properties of the actual surface in addition to the 2D surface appearance. In experiments, a forced-choice, 10-point scale to rate harmony-disharmony was used for data collection. Our results indicated that the sample pairs with similar surface appearance were viewed as harmonious, even though their materials were different. Furthermore, the appearance of harmony of the materials was significantly affected by the subjects' reactions to the reflections of the tilting samples. These results suggest that appearance properties should be studied in a more in-depth manner by using actual materials rather than reproduced images on a monitor.

INFLUENCE OF SOME FACTORS ON COLOUR EMOTION FOR TWO COLOUR COMBINATIONS

DASHTI, Samaneh; IZADAN, Hossein
Department of Textile Engineering,
Isfahan University of Technology, Isfahan, Iran

ABSTRACT

Psychophysical experiments were conducted in Iran. The impact of age, gender, culture, nationality, environment, education, and position of colours in two color combinations on Five colour emotion scales "warm-cool", "heavy-light", "active-passive", "like-dislike" and "harmonious-disharmonious" were investigated. A total of 190 colour pairs were used as stimuli in psychophysical experiment. 51 Iranian observers with normal vision, examined with Ishihara colour blindness test, attended the experiment. By comparing the result Iranian observers who live in Iran and Iranian observers who live in England more than 6 months effect of environment investigate. The results of the experiments showed that "like-dislike" and "harmonious-disharmonious" colour emotion scales have close correlation. Also It seems that there is no gender, culture, environment, educational background and age effect on the three colour emotion scales, which make the Li Chen Ou's colour emotion space, "warm-cool", "heavy-light" and "active-passive". However, apart from the gender, these factors affect the response of the observers to the "like-dislike" scale and it means colour preference is likely to be affected by these factors. The application of the Li Chen Ou's proposed models of colour emotion for the Iranian results showed that there is no good prediction for the "heavy-light", "like-dislike" and "harmonious-disharmonious" scales. However, the models have fairly good prediction for the "warm-cool" and "active-passive" scales. The observers with design background who design for long time have preference close to non-designer and know their colour preference. For the effect of nationality results show strong effect between Iranian and England, especially for colour preference. Also, the results indicated that Iranian prefer the colour pairs which have small hue difference and those for which the average of their chroma is high. Iranian observers prefer the colour pairs which high mean lightness value more than Iranian observers who live in England more than 6 months.

COLOUR, INTERIORS, SPACE, BAHRAM BEYZAIE'S CINEMA

HABIB, Susan; ZAREI, Elika
Islamic Azad University, Tafresh Branch

ABSTRACT

Bahram Beyzaie (recently professor at Stanford University) is an Iranian researcher, scriptwriter, director and filmmaker. His essays on semiotics, history, myths, myths of Eastern civilizations, and Iranian myths are unique and his scripts and movies contain reflections of his thoughts and researches. He believes that myths and rituals are alive in culture, and nations live them, mostly without knowing that they are repeating their ancestors' rituals. Deep research on myths and rituals of ordinary people may come to an understanding of a kind of anthropology, a kind of social and individual psychology, and nature of roots of poem or space that people live in. Beyzai's use of colour and colour combination in his cinema is a painter's use of colour. He is aware of colour's power and uses it on favour of the feeling and meaning of the scene. An example of use of colour in interiors of Bahram Beyzaie's cinema might be *Maybe Some Other Time* (1988), in which two parallel, yet separate lives of twins, Kian and Vida, and their reunification, Kian's identity crisis is worked. Blue and orange, two contrast colours are seen in most scenes, especially in Kian's home. The light, flowers on her table, costumes, in all spaces related to Kian these colours or an implication to these can be seen. In *Travellers* (1992), however, the dominance of black and white is obvious. This paper will specifically study colours of interiors, scene and space in Bahram Beyzai's cinema and the meanings behind them, in relation to myths, rituals, and today's lives.

Session 21: Architectural and artistic color applied

ANÁLISIS DE LOS ATRIBUTOS DE DISEÑO CON COLOR PARA MEJORAR LA INTEGRACIÓN VISUAL DE ARQUITECTURAS CON IMPACTO EN LA CIUDAD DE VALENCIA

Juan SERRA¹, Ana TORRES¹, Ángela GARCÍA¹,
M^a Carmen LLINARES², Susana IÑARRA¹

¹ Universitat Politècnica de València, Escuela Técnica Superior de Arquitectura

² Universitat Politècnica de València, Escuela Técnica Superior de Ingeniería de la Edificación

ABSTRACT

Este estudio forma parte de un proyecto de investigación cuyo objeto es la definición de estrategias de mejora en la integración visual de arquitecturas con impacto en el paisaje, basándose en criterios cromáticos. Como casos de estudio para intervenir en este proyecto, se han seleccionado una serie de edificios del centro histórico de Valencia que han sido identificados en la legislación urbanística por generar impacto visual. Sobre estos edificios se han aplicado una serie de propuestas de intervención mediante color con la finalidad de reducir su impacto estético y mejorar la valoración del ciudadano. Estas propuestas se han materializado en forma de fotomontajes y conforman una “base de estímulos” para ser evaluada por los observadores participantes.

Como herramienta de análisis para recoger la respuesta del observador ante las diferentes propuestas cromáticas, se ha diseñado un cuestionario basado en trabajos de integración paisajística realizados previamente. Estos estudios recogen, mediante escalas bipolares, un conjunto de adjetivos que evalúan la respuesta estética de los usuarios a las fachadas coloreadas. La limitación que puede plantear la utilización de estas expresiones obtenidas con usuarios de otras localizaciones y en otros momentos del tiempo es que pueden no corresponderse con el esquema conceptual de los usuarios objeto de estudio. Para adaptar e incluso ampliar este conjunto de expresiones se ha utilizado la técnica de investigación cualitativa del “Focus Group”. Esta técnica exploratoria ha permitido identificar criterios, impresiones y actitudes de los diferentes sectores de la población, en torno al concepto de la integración paisajística. De esta manera nos aseguramos de que los cuestionarios recogen un conjunto de variables fácilmente reconocibles por el observador. La definición adecuada de estas variables es fundamental para su posterior correlación con la valoración final de la intervención o con los atributos de diseño.

ECO – DISEÑO Y COLOR. UNA PROPUESTA DE INNOVACIÓN Y APROXIMACIÓN METODOLÓGICA

ODETTI, Jimena Vanina; REYES González, Alberto;
REYES González, Andrés Enrique
Instituto Tecnológico Superior de Puerto Vallarta

ABSTRACT

En la actualidad la metodología del eco diseño aplicada al diseño de objetos, presenta un gran auge, con numerosas marcas y firmas que convierten a la reducción de los impactos medioambientales en las etapas de diseño como un valor agregado al desarrollo de sus productos.

Sin embargo en cuanto al uso y aplicación del color en estas nuevas líneas de objetos es muy poco lo que se ha analizado o propuesto e incluso abordado desde el ámbito académico.

Es el diseñador quien conceptualiza y otorga cualidades a un objeto, como lo es entre otras el color. En el marco del nuevo paradigma de la sustentabilidad y el trabajo de diseño pareciera que el tema del color solamente se asocia a escalas cromáticas que nos conducen a los colores neutros o a un imaginario social que se ubicaría dentro del verde. A partir del proyecto de investigación "Innovación y desarrollo de productos para el ITSPV con base en artículos de desuso" se abre un nuevo análisis y enfoque metodológico que pone al color como parte del proceso de diseño, dentro de las opciones a escoger e investigar por los diseñadores, respetando la naturaleza del planteo del eco diseño, pero pensando cromáticamente los objetos.

En el presente artículo se exhiben algunos productos y trabajos en donde el color y el eco diseño se acercan para generar una nueva metodología de trabajo basada en la creatividad, la cromaticidad, la identidad cultural y la disminución del impacto medio ambiental en los procesos de diseño.

Session 22: Design and culture

DIGITAL COLOR DESIGN OF 'CHINESE RED' METHODOLOGY AND APPLICATION

CHE, Jiangning^{1,2}; SONG, Wenwen²

¹ California State Polytechnic University in Pomona, California, United States

² Color & Image Institute, Art & Science Center, Tsinghua University, Beijing, P.R. China

ABSTRACT

In this paper, a new approach that uses science and technology to design a color - 'Chinese Red' - for a prestigious civil engineering project is discussed. The Chinese government commissioned a bridge to be built and decorated in a classical Chinese red color. The approach to color selection involved color design, color science, color data visualization and imaging technology. More than a hundred color specimens representing 'Chinese Red' in terms of history, culture, and folk custom were collected and measured. The data was mapped in a CIELAB color space, and a normalized point of "Chinese Red" was calculated using measured data sets. A cubic model was built to calculate reference colors derived from the normalized point with evenly distributed color attributes in terms of Lightness, Chroma and Hue. Then reference colors were evaluated both visually and digitally in the color and imaging systems. Eight colors were appraised and chosen for physical sampling using digital communication and color formulation. Physical color samples were evaluated visually and digitally, under different illuminants and other outstanding criteria. Four colors were chosen and used for on-site painting experiment on a life-size model for half year experiment under extreme weather conditions. Finally, the color with less variation and good weather fastness was designated as 'Chinese Red' for the bridge. This approach takes the advantage of the color measurement, color quality control, color formulation, and real-time digital color communication technology to bridge the gap between art and science.

ARCTIC TERRITORY COLOUR CHARTS: A WAY TO EXPLORE AND DEVELOP LOCAL IDENTITY AND DESIGN

JARILD-KOBLANCK, Henriette;
AHLQVIST-JUHLIN, Maria; MORO, Monica
Luleå University of Technology (LTU), Politecnico di Milano

ABSTRACT

The objective of this research project is to explore the colour range of Norrbotten, in the North of Sweden. It borders east to Finland and being partly inside the polar circle it has a polar night and day. On these premises the scope is to develop an identity mark of this region's design and handicraft to support the economy and level of population.

Starting from the Kapferer's theories about strategic brand management, Krippendorff's ideas about co-design and Henriette Jarild-Koblanck's Identity Tool Kit, under the direction of Maria Ahlqvist-Juhlin the students of the Mediedesign Course at LTU Luleå University of Technology have worked on the concept of Identity and Colours. A description of the methods used may be shortly summarized in analysis of existing colours in the territory's nature, in different season plus historical and cultural ones related to particular history of this region, interviews with experts in the field of architecture and design. Finally the charts were to be proven on real full-scale models. The colour charts are to be tested on facades and objects, keeping in mind that "nearly every academic study on colours and branding will tell you that it's far more important for your brand's colours to support the personality you want to portray instead of trying to align with stereotypical colour associations (Ciotti; Labrecque, Milne), and also Stamps (1989) gathered enough evidence to assert that carefully arranged urban environments attract people and make them feel better: this is a necessary condition to maintain these places alive and safe (Naoumova, Dias Lay,2009)

COMMODITY COLOR NAMING USED AT ONLINE SHOPS IN JAPAN

KIWAMU, Maki
Jissen Women's University

ABSTRACT

Two surveys were executed to obtain data about the use of color names in online shopping. Then an experiment was conducted to clarify the function of the words that are combined with the word expressing the color itself.

The frequency of occurrence, at two major online shops, of the 269 color names registered in the Japanese Industrial Standards (JIS) was calculated. The result showed that only 8 colors were represented in 72 percent of usage, while 203 color names were not recorded at all. Fifteen basic color names occurred in the top twenty-one color names. The result shows that JIS color names have little influence in informing the color of commodities. Moreover, it was remarkable that the color names expressed by Katakana, the characters for expressing pronunciation of foreign word, occurred in 17 of the top 21. The preference was for pleasing images rendered by abstract Katakana expressions.

In the second survey, 3678 commodity images and the captions indicating the color names were collected from six online shops, within four categories. Seventeen percent of the captions included descriptions containing symbolic expressions of luster, texture, atmosphere, such as "smoky blue," "crystal white," or "urban beige."

Then an experiment was conducted in which the subjects selected the available expression of the combination of these symbolic words and color names to the exhibited images of commodities in four categories. The factor analysis results of the obtained data showed the dimensions of thickness and luster in electric appliances, the word groups expressing texture and color combinations in window treatments, the word groups of grave taste and denim features in casual clothes, and the dimensions of sex and age in Japanese-style clothes.

ART GLASS IN ARCHITECTURE

BRUSTOLON, Veronica
University IUAV of Venice

ABSTRACT

Colours had always an historical importance in art, architecture and design. The completeness of an art work is found only with an accurate study of colours, in other words the analysis of all the different situations that appear during a day with different chromaticism, lights, sounds, images. In fact there is a close connection between colour and light.

Through this pairing of light and colour it is possible to create particular atmospheres and awesomeness with highly emotional environmental and human impact: their inseparable interaction contributes to shape the environment, with different light and colors, obtaining different effects. Its functional use upgrades the environmental quality at a reasonable price, with an energetic and economic saving. Additionally, through the combination of specific colors and particular textures it is possible to create optical illusions like pulsing and vibration effects.

During a research project with the University IUAV of Venice, an important and neglected branch of fine arts were analysed: the artistic glass. This project was possible thanks to the cooperation with an important glass fabric of the Murano island (Ve). This permitted to develop a new architectural branch: the use of blowing glass on smart glass facades, taking advantage of the energetic containment of smart materials and the chromatic peculiarity of Murano's artistic glass.

The paper will analyse in more detail the two prototypes realize directly in the Murano's furnace.

WHITE COLOUR IN ARCHITECTURE AND BUILT ENVIRONMENT – FACTS, MYTHS AND CONTEMPORARY APPLICATION

TARAJKO-KOWALSKA, Justyna
Cracow University of Technology, Faculty of Architecture

ABSTRACT

The article presents selected results of the broader research conducted by author, dedicated to the use of the individual colour hues (colour palette) in the built environment, including their history, traditions and contemporary application. The main goal of this article is to summarize and present the most important facts, but also myths, concerning use of the white colour in the built space. White is an exceptional colour and the rationale for its use in the architecture were and are very diverse. Different aspects of architectural white includes: functional "whitewash" of the traditional houses; the classicist and neoclassicist praise of white, based on the myth of the whiteness of the antique Greek's and Roman's structures; Le Corbusier's "white manifesto", with all its consequences for the "white" image of the Modernism; the activity of architects such as: New York Five group, A. Aalto or O. Niemeyer and architects for whom "white" is a trademark as R. Meyer, S. Calatrava or A. Siza, ending with other followers of "white color philosophy" - a preference for the white volume over the decorated surface, which can be linked to the conflict between classic and romantic, *disegno* versus *colore*. Article deals also with aspect of contemporary whiteness of the buildings, which is different from this of the classic modern architecture, due to new artificial materials and façade technologies, that makes achieving glossy and bright whites possible, difficult to reach in plaster. White is traditional and classical both modern and avant-garde colour in architecture. Simple and neutral both complicated and contrasting, appropriate and at the same time radical, "naked" both "dressed" (according to M. Wigley), unambiguous both chameleonic, safe and pure both dangerous and aggressive. Having significant position, white will never be old-fashioned colour in architecture.

A TRANSITION OF COLOUR

OLSSON. Gertrud

KTH School of Architecture, Royal Institute of Technology, Stockholm

ABSTRACT

A hundred years ago the Swedish architect Erik Gunnar Asplund (1885–1940) realized his Grand Tour to Italy. He visited Agrigento, Palermo, Taormina, Pompeii, Rome and Ravenna among other places in 1913–14. Instead of solely focusing on the buildings, Asplund carefully has described the atmosphere of the country in words and pictures in his sketchbooks from his journey. He draws and writes about the black velvet sky, the shining stars, the blazing sun, the deep blue sea, the reddish earth, the coloured lanterns. Thus, the study takes into account moods, colours and light in the Mediterranean culture, in urban and private rooms and in space between. Asplund describes colour both as visual and tactile, in terms of material and surface character.

These sensuous qualities are apparently tangible on location, but are they possible to transfer to the physical architecture to be built in the cold North? During his Italian tour Asplund was not primarily thinking of how to use his impressions professionally.

Nevertheless, in his future projects, he made use of his Italian recollections. After his journey, Asplund soon discovered the importance of a strong relationship between landscape and buildings, and the meeting between architecture and everyday folk life. Some examples are the Bologna-red colour on the facade of the Stockholm City Library, and the atmosphere in the children's story reading room created as a mini amphitheatre inside the library. The starry night sky and the carnival atmosphere in the Skandia cinema are likely reminiscences of Italian nights. One focus in the study is the antique colours, ornaments and motifs seen in the Pompeii buildings and in the Houses of Livia and Augustus in Rome. Later transformed by Asplund into the Skandia cinema and in the Stockholm City Library. A tradition transferred into a new context and a new culture.

Session 24: Fashion and light

FASHION IRIS: A METHOD FOR CREATING A COLOR IDENTITY IN FASHION

RANGEL Vázquez, Nallely
Asociación Mexicana de Investigadores del Color

ABSTRACT

El artista de moda incita al color para que habite sus creaciones libremente. El Iris de la Moda es un método basado en el proceso creativo para potenciar la capacidad del artista de apropiarse del color como material en sí mismo. El proceso de creación en la moda, se divide en dos misiones: la misión del textil; y la intervención del material. Con esto se configura la tipología de las prendas. Yo añadiría una tercera, y esencial misión: la misión del color. Algunos artistas de moda, han logrado apropiarse de los colores que usaron, a tal grado que nosotros asociamos dichos colores con los artistas. Por lo cual es necesario un método para que el artista cree su identidad propia, a partir del color. El artista debe manejarse con plena libertad en las tres misiones del diseño y no subordinado al mercado ni a tendencias, ya que el único material que controla y manipula en su mente absolutamente, es el color. La mente del artista se nutre y debe de llegar a un nivel suficiente, para crear un universo cromático personal. El artista de moda debe estar consciente de que antes de vestir ropa, vestimos colores. Toda prenda consta de dos elementos: de una geometría que consta de textura, estructura, forma, volumen; y de una metageometría que consta del color, sus combinaciones y tonalidades, es decir su sintaxis. Una óptica particular, crea una personalidad particular. Podemos tomar ventaja del proceso inverso a la relación del color con la óptica para educar al ojo del artista en relación con la personalidad y carácter, que trabaja la moda de vanguardia. Entonces el artista no crea de acuerdo a su modo de ver, en lugar de eso el artista ve de acuerdo a lo que quiere crear.

CHANGING FASHION PREFERENCES OF BRIDAL WEAR IN INDIA: A CULTURAL SHIFT

RAO, Swati¹; SUD, Shalini²

¹ Independent Design Researcher, Bangalore, India (M. Design 2012, NIFT New Delhi)

² Professor, Department of Design Space, National Institute of Fashion Technology,
New Delhi, India

ABSTRACT

Universally, dresses have been known to indicate one's cultural identity. The most illustrious and expressive dresses are wedding garments. Weddings today are almost of the scale of an event and symbolise pride and prestige, displaying one's ethnicity, economic wealth and social standing. As diverse are India's culture, equally diverse are its numerous wedding traditions; each community having its own tradition and unique bridal attires. Over time this tradition led segment has evolved and witnessed a radical shift not only in the perception of fashion change but also in the larger purview of the meaning attached to it to keep pace with the current values of the society and so has the bride's attire. Prevalent trends are indicative of a constantly evolving society; reflecting the motivation that drives the brides to alter their traditional dress; reflecting their understanding of world view, changing goals, preferences and values of a society against the previous assumption of customs being static in a traditional setting. This study attempts to analyse macro and micro information on fashion change with specific reference to bridal wear. Established models of fashion adoption and change are employed to establish the cultural shifts observed in India towards preferences and emergence of new thematic categories in bridal wear hence mapping the essence and language of traditional in today's pretext.

Session 24: Fashion and light

EXPLORING PATTERNS OF CHANGES IN NATURAL COLORS A CASE STUDY IN THE NATIONAL PARK OF YANG MING SHAN, TAIPEI

SUN, Vincent; LEE, Tien-Rein
Chinese Culture University, Taiwan

ABSTRACT

Nuestro entorno natural ofrece una de las mayores fuentes de inspiración y aprendizaje: sus infinitas variaciones de colores y formas que no sólo los artistas de combustible con una creatividad sin límites, sino también enmarcar los procesos y contextos de la percepción humana y la comprensión en general. El carácter ilimitado de color se dio cuenta a través de frecuentes cambios de color, debido a muchos factores influyentes causados por la luz y el punto de observación. ¿Qué cambios de color se puede encontrar mediante la observación de un paisaje desde diferentes distancias? ¿Qué cambios de color de ese mismo lugar son inducidas por diferentes influencias estacionales, o las condiciones climáticas? Dibujando en el ejemplo de un sitios naturales especialmente seleccionados, este estudio tiene como objetivo 1) el seguimiento de los cambios de color antes mencionados, 2) el estudio del grado de los cambios de color, y 3) identificar el patrón de cambio que constituye subyacente. Un estudio que se concentre en el cambio de color mediante la visualización de la distancia y las condiciones meteorológicas ya se ha llevado a cabo en Yang Ming Shan Parque Nacional, Taipei, Taiwán. Entre otros, se encontró que el tiempo nublado y brumoso intensifica color azulado, y el clima soleado aumenta amarillamiento y enrojecimiento. Se presentarán los resultados del estudio y la encuesta basada en el Sistema de Color Natural (NCS).

MULTISENSORY ENVIRONMENTS OF LIGHT AND COLOUR: THE PERMANENT AND THE EPHEMERAL

Simões, Z.^{1,3}; César, J.²; Duarte, R.B.^{1,3}

¹ THE RESEARCH CENTRE FOR ARCHITECTURE, URBAN PLANNING AND DESIGN (CIAUD),
FACULTY OF ARCHITECTURE OF THE UNIVERSITY OF LISBON

² FACULTY OF ARCHITECTURE AND URBANISM OF THE UNIVERSITY OF SÃO PAULO

³ PORTUGUESE COLOUR ASSOCIATION (APCOR)

ABSTRACT

In the current technological and cultural condition, almost all areas of human and social activity are being (or will be) affected. The growing concern with the “image”, the instant persuasion and the acceleration and fragmentation of experiments have been limiting procedures that interfere with the thinking and doing, changing the nature of the project act in its representation and relationship with the human being.

Before the speed of change in space / time, individual / materiality relations, emerges the need of awareness to create new forms of expression and interaction of light and colour. In this context, we propose to analyze the methodology, in particular, of Rachel Wingfield and Mathias Gmachl, Steven Holl and Carlo Ratti considering the characteristics and fundamental relationships established in the process of creating effects that appeal to feelings and encourage the development of the imagination.

Among many aspects, we question the relationship between built and lived and the loss of sensitivity of some authors toward human being and space, enunciating as a new paradigm, the necessity of change the glance of science and further approximation of various areas of knowledge. A discussion which circumscribes, in particular, the senses, the place, the time, the materiality, the colour and the light and proposes the transformation of the human environment and its surroundings making the space protagonist of a system of relations that rediscover and redefine the physical, social and emotional dimension.

The space announced the intensity of the form in a rescue relationship between colour, light and matter. It stands out the idea of material and immaterial, permanent and ephemeral representation, sprouting the metaphor between composition and time, principle and technique, effect and poetic. The development of such potentialities enables to create principles that contribute to the interdisciplinary relationship between the design, the construction and the living.

Session 24: Fashion and light

CHROMA AND SATURATION : THEIR DIFFERENCES AND HANDLING IN THE CORRECTION OF COLOR IMAGE IN THE AUDIOVISUAL ENVIRONMENT

MELITA, Salvador Edmundo

Departamento de Artes Audiovisuales, Fac. de Bellas Artes. UNLP.
Seminars, introduccion al color en CCC, Mexico y EICTV, Cuba.

ABSTRACT

The terms chroma and saturation are often confused . Both somehow define color intensity, and specifically in some color order systems , the growth of color intensity is called indifferently one way or another.

I base this work on the differentiation that Munsell makes between the two concepts .The interpretation trough a color notation system based on the zonal system of Ansel Adams helped me to understand this difference.

Here each color is named after the Zone in which it exposes each of its components (RGB) both on film or video sensor . So a medium gray would be 5,5,5 , while a red would be 7,3,3. Tracing on a page of this atlas the lines presented by Munsell as constant chroma and constant saturation, I found that saturation , much like in chemistry would be the gray at the bottom and chroma what is above the gray .

That means that what we call chroma or saturation , and in most cases saturation, we should call chroma, since it is the variable that grows horizontally if we look at a page of an atlas.

In general, these variables are not differentiated in color correction software . When you change the "saturation" there is variation both above and below the signal ,meaning if we increase it , chroma grows and saturation lowers and vice versa . This may cause in some cases when we raise the chroma too much, distortions or electronic noise to appear in playback. If we could work with them separately , color intensity (chroma) could increase by lowering saturation, gray content, without altering the signal in the highlights .

The application used for testing, that I will exemplify with on the presentation, is the color corrector SpeedGrade from Adobe , which has different tools to perform the correction.

This process has become of vital importance in today's production and has notoriously increased the amount of colorists. They often lack training in color theory, however, so it would make it much easier for them to operate allowing them to conceptualize differently the task they are performing.

INDIGENOUS CATEGORIES OF COLOR

TREJO Cuevas, Ericka

Escuela Nacional de Antropología e Historia ENAH

ABSTRACT

Resulta difícil concebir una unidad de las cosmovisiones mesoamericanas, sin embargo, para este estudio resultó interesante ampliar la reflexión y análisis a la etnografía contemporánea de los grupos indígenas mexicanos, ya que pensamos que existe una esencia compartida que admite a la mitología, a las prácticas, y a las relaciones como expresiones fundamentales del pensamiento cosmológico y cosmogónico que fueron bases sólidas para dilucidar esquemas significativos del cromatismo dentro de la gran diversidad y riqueza de las expresiones indígenas. No podemos negar que el devenir indígena se sustenta en intensas interrelaciones a través de los siglos que crearon visiones compartidas que permiten, todavía hoy en día, explicar el funcionamiento del cosmos. Por ello, resulta significativo analizar el color como medio de cohesión entre los miembros de los distintos universos conceptuales. El color, entre otros elementos que remiten a la dimensión sensorial, ha sido utilizado como medio para entender las relaciones entre elementos que pertenecen a universos dispares. A partir de los avances de mi investigación considero que las tonalidades cromáticas pueden establecerse como organizadoras del mundo de los "sujetos" (divinidades, animales, seres de la naturaleza, etc.) que conforman lo existente, ya que éstos pueden ser caracterizados y agrupados por un determinado color lo que permitiría la creación de categorías y el ordenamiento de lo existente.

A través de los resultados de búsqueda al respecto del uso de los colores en contextos indígenas, nos lleva a establecer que su empleo se realiza en contextos específicos y de estos usos se deriva su significación. Pero, ¿qué pasaría si encontramos que existe una codificación que permita establecer una simbología relativamente estable de estructuras cromáticas en el pensamiento indígena?, esta pregunta guía una serie de análisis que actualmente realizo en mi investigación de maestría en Antropología.

INGA PEOPLE COLOR AND SYMBOLISM

MUYUY Ojeda, Yenny Alejandra

Estudiante indígena en la Universidad Nacional de Colombia, Sede Palmira

ABSTRACT

En nuestra comunidad indígena Inga se utilizan las artesanías, que se dividen en cuatro modalidades que son tallado en madera, tejido en chaquira (mostacilla), Tejido en lana e instrumentos musicales, para nosotros las artesanías es símbolo de sabiduría y reflejo de nuestra gran pacha mama (madre tierra), también se encuentra compuesto por figuras geométricas que se componen del color, significado y simbología, cuando una figura geométrica se le anexa el color de inmediato cambia el significado de acuerdo a los colores que se combinan, eso no quiere decir que cambie el significado de la forma geométrica, por ejemplo si tengo un círculo de color negro puede significar un punto de inicio o señalización, pero si continúo con el mismo círculo, pero en esta ocasión lo pinto de rojo significaría una gota de sangre o de inicio, el círculo simbolizaría un punto de inicio y/o señalización. Cuando una misma forma se ordena de diferentes colores y si uno selecciona un objeto artesanal con sus combinaciones, para nosotros es un modo de ver la psicología mirando las necesidades o faltas que tiene cada persona, hace descubrir cómo es la persona que problemas tienes como es su forma de actuar, que vida sentimental tiene y como es en su propio ser recordando que no somos adivinos sino que simplemente el objeto llama la atención de la persona, reflejando los cambios que obtenemos y que nuestro cuerpo pide al paso de nuestra vida cotidiana, es por eso que la gran mayoría de los pueblos indígena es reconocido por su gran conocimiento empírico y que ha estado de generación en generación y por medio del color, formas y movimientos del cuerpo se puede conocer parte de un ser.

THE SEMIOTICS OF COLOR IN TA'ZIYEH

BOZORGMEHR, Shirin
University of Art, Tehran, Iran

ABSTRACT

The aim of this article is to elucidate the semiotics of color in Ta'ziyeh, a Ritual and Drama in Iran.

In Persian cultural reference Ta'ziyeh is inspired by historical, mythical stories, folk tales and religious events through poetry, recitation, music, song and motion, symbolize epic spirit and resistance. Ta'ziyeh with its own specific style and rituals which symbolize the eternal and unwavering stance of truth against falsehood and humanity's struggle against tyranny realized by Imam Hussein the third Imam of the Shi'ite Muslims. It narrates the story of martyrdom of Imam Hussain, and his companions in Karbala during his uprising in Ashura, the tenth day of Muharram, in more than 14 centuries ago. Intimate familiarity of the audience with the story plot, their belief in the infallibility and righteousness of the Imam, their conviction of the savage behavior of the villains, and the power of their imagination, renders the need for symbolic elements for setting the mood, redundant. There is also a color code inspired by Sacred Color of Islam, like green, which has been a symbol of the religion itself and it was worn by Muhammad, symbolizes life and nature and the colors of paradise. White is used to symbolize purity and peace. Black is considered the color of mourning. Blue is a protective color and it can be found coloring many of the most famous mosques and one need only call to mind Persian miniatures, Oriental carpets, or lustered ceramics which all used in Ta'ziyeh.

PROVENANCE OF CULTURAL COLOUR MEANINGS

KOMMONEN, Kirsi Riitta
Aalto University School of Business

ABSTRACT

This paper proposes a conceptual framework for analysing the dynamic meaning-making process for cultural colour meanings in the global market place. Grounded in the cultural approach and multimodality, and based on empirical data from Sino-Finnish business encounters, the paper presents a tripartite perspective to the provenance of cultural colour meanings: persisting colour meanings, cultural colour heritage, and transforming colour meanings.

The framework acknowledges that the cultural meanings of colour originate from shared cultural experiences related to relatively persisting colour meanings or relatively transforming colour meanings. The persisting colour meanings can be related to religious colours, ideological/value-based colours, national colours, ethnic colours, linguistic colour meanings, or colours of the environment, while the transforming colour meanings can be related to colours from "other" cultures, colours of particular eras, colours of ethnic, religious, or linguistic minorities, colour expressing wealth, gender-bound colours, or colours of younger generations. Moreover, the colours related to shared experience in reference to religious, ideological or other value-bound colours form the cultural colour heritage within a cultural context. This cultural colour heritage acts as a type of filter between the other persisting colour meanings and the transforming colour meanings in the dynamic process of negotiating and re-negotiating cultural colour meanings. The framework is visualised as a globe where various cultural experiences interact. These aspects are illustrated with rich photographic data from China and from Finland.

Finally, the paper concludes that in cross-cultural context, the communicative functions of colour are ideational, interactional, textual and expressive. Communicators use resources from their particular context-specific cultural identity and experience to assign meaning for a colour. Consequently, the communicators become expressors who, intentionally or unintentionally, express their cultural experience via colours. Therefore, in a cross-cultural context the modality of colour may gain new meanings, and "meaning-making" is not in the control of the communicator/expressor.

COLOR E IDENTIDAD CULTURAL EN LAS HACIENDAS MEXICANAS. EL CASO DE LA RUTA DEL TEQUILA EN JALISCO, MÉXICO

ODETTI, Jimena Vanina
Instituto Tecnológico Superior de Puerto Vallarta

ABSTRACT

El legado cultural de una sociedad representa una herencia única e irremplazable, construido con elementos materiales como construcciones y objetos e inmateriales como expresiones, conocimientos y técnicas pone de manifiesto los vínculos e interacciones entre las personas y su entorno.

Uno de los lenguajes que forma parte de este legado cultural es la arquitectura y su relación con los mensajes visuales que comunica.

Dentro de estos lenguajes aparece el color como un elemento significativo en la arquitectura que transmite ciertas emociones y expresiones de un modo de vivir y percibir el universo simbólico de un pueblo, y en México esto es distintivo.

Las haciendas mexicanas presentan esta relación entre su edificación, el uso del color y las múltiples relaciones culturales que se tejen a partir de éste diálogo. Signo de una cultura que convive con él en todas sus manifestaciones. En esta presentación se plantea la existencia de colores predominantes, comunes, y significativos en cinco haciendas del Valle del Tequila que señalen un rasgo de identidad cultural. El objetivo del proyecto se centra en identificar la presencia de códigos cromáticos, analizando la relación entre el color, la arquitectura y la identidad cultural en la región.

A partir de un diagnóstico de detección, clasificación y generación de base de datos de Haciendas del Valle del Tequila y con la aplicación de entrevistas, recopilación de historias de vida y diarios que registran las observaciones in situ sobre los sujetos de estudio en cada localidad y en cada hacienda, se analiza la percepción sobre el color en las haciendas de Jalisco y la importancia de los mismos como símbolos de identidad cultural.

Session 26: Color in the cities II

**URBAN PACIFIC STYLE:
CONTEMPORARY FASHION, BODY ART AND
ADORNMENT IN AOTEAROA (NEW ZEALAND)**

PETERSON, Giles

Whitecliffe College of Arts and Design, Auckland, New Zealand

ABSTRACT

Urban Pacific Style is not elitist fashion nor is it a neo-tribal style. Rather it conveys the multi-layered experiences of Polynesian urban communities living in New Zealand today. Urban Pacific style draws upon the customs of diverse Pacific cultures and marries these with global trends and western archetypes to create something fresh. Urban Pacific Style is a personal signature born out of multi –faceted relationships to the island and urban environments of the Pacific. This paper will explore aspects of Urban Pacific Style in Contemporary New Zealand while acknowledging the importance of fashion, body art (tattoo), jewellery and adornment. Aided by an analysis of particular curatorial projects developed over the last decade and a half (1999-2012) the phenomenon of Pasifika –that is the emergence of hip hop and street based fashion styles and of specifically poly– hybrid art including design, fashion forms and collaborations will also be explored.

TRADITIONAL COLOR OF CITIES IN CENTRAL-EASTERN CHINA

ZHUANG, Yi¹; YAMAMOTO, Sari²

¹ University of Tsukuba, Graduate School of Comprehensive Human Science,
Master's Program in Art and Design

² University of Tsukuba, Institute of Art & Design, Japan

ABSTRACT

The central-eastern region in China, as the pioneer of the implementation of the environmental color planning, has become an important reference to other areas in China. The purposes of this research are to understand the general features of environmental colors of the traditional cities in central-eastern region, and the individual environmental color matching. In order to reflect the general features of the environmental color, three historical cities are chosen in this research: Zhouzhuang, Fenghuang and Chibi, which are in the east, middle and west of the central-eastern region respectively.

The general environmental color features of the central-eastern region come out according to literature research and color measuring in field research. The roofs are in color N, 10B~10PB and 5R~5YR. The colors of the exterior walls are generally in color N, associated with 2.5R~5Y which is also the similar color of the balconies, doors and windows. The street furniture are similarly in the colors of 5R~2.5Y, N and 5B~5P. The signs are using 5R~10YR and N on the background, and on text colors using N1, N9, 5GY~10G and high-value and high-chroma colors 5R-2.5Y. The similar colors are used in the central-eastern region, but the frequency of the color, using area of the color and the differences on the tones are used to show the individual characteristics of three different cities. At last, the authors come up with the color planning for the central-eastern region in China according to the results of the research.

Session 26: Color in the cities II

ADAPTIVE URBAN CHROMATIC CONTROL METHOD. CASE STUDY IN BUCHAREST, ROMANIA

ZYBACZYNSKI, Veronica Maria

Faculty of Architecture, Ion Mincu University of Architecture and Urbanism,
Bucharest, Romania

ABSTRACT

After the communist era, in the early '90s, the Romanian urban landscape gradually began to change, as new materials and colours became available. These, together with the desire to be detached from the former forced uniformity of communism, on the one hand, and the significant gaps in the urban Romanian legislation, on the other hand, have nowadays led to a chaotic landscape and a chromatic "dizziness" affecting the global image of the Romanian cities, an urbanscape torn between excessive polychromy and colour chaos.

In this context and given the obvious change in the colour quality of the Romanian built environment, this article proposes a method of adaptive urban chromatic control based on the analysis and synthesis of chromatic informations that exist in-situ aiming to generate urban chromatic regulations.

Within the synthesis of the field data it was aimed to objectify the results by using a mathematical formula that generates the colour profile of the streets expressed in percentages. The adaptive character of the resulted chromatic schemes derives from the consideration of the urban development strategies of municipalities, of the colour preferences of residents and also of the dynamic nature of the chromatics of an area. This method is tested in a case study on a street in Bucharest.

The study has generated a number of colour schemes that can provide to the local authorities a basis for the achievement of colour regulation of the area. Due to the ease of implementation and to its objectivity, this method can be used in the planning process of the chromatic urbanscape.

TILES: LISBON TATTOOS

GAMITO, Margarida

CIAUD – Research Centre in Architecture, Urbanism and Design,
Faculty of Architecture, University of Lisbon;
Portuguese Colour Association.

ABSTRACT

This paper aims to explore the impact that tiles panels have on the city chromatism. The origin of tiles is very remote and the earliest evidence of its utilisation is from the 13th century BC. This technique was largely employed on the Middle East, where it was easy to find its basic material and, also the natural pigments which give them their vibrant colours. The Moslem migrations took the tiles techniques into the Orient where tiles had a great development, such as China and Japan, among other countries. The Roman invasions also spread this material all around Europe.

Due to the Islamic occupation of the Iberian Peninsula, Portugal inherited the tiles techniques from the Arabs and they became an important part of the Portuguese culture. During the 15th and 16th centuries, the use of tiles was a privilege of high classes and they were applied on artistic panels that covered the surfaces of the interior walls of palaces and churches. The low cost of this material, along with the easy reproduction and the feeble need of conservation, allowed its industrial production in large scale, during the 18th and 19th centuries, becoming tiles the favourite covering material for exterior and interior walls of popular buildings. By the mid-20th century, Portuguese Artists and Architects developed a tendency to cover large city spaces with artistic tile panels, created on purpose, which included various specific colours and textures.

In this paper, several of these tiles panels will be analysed, which were created by well-known artists for the City of Lisbon. For their dimensions, colours, textures and significance, these panels became a landmark of the city and contribute to the transformation of the city dominant colours.

POSTER PAPERS



POSTERS SESSIONS

Wednesday 22

Color Meanings
Arts
Education
Tincts and Dyes

Thursday 23

Psychology and Perception

Friday 24

Color and Design
Architecture
Urbanism
Technology

COLOR MEANINGS - poster

COLOR AND DESIGN IN PREHISPANIC ZAACHILA: THE POLYCHROME CERAMICS OF THE LATE POSTCLASSIC FROM TOMBS 1 AND 2

CAMARENA Ortiz, Eréndira Dolores

Candidata a doctor por la Facultad de Filosofía y Letras
Universidad Nacional Autónoma de México

ABSTRACT

Among the objects excavated in the 1962 by archaeologist Roberto Gallegos in Zaachila Oaxaca, we have a collection of 30 polychrome vessels from the tombs 1 and 2, that now belong now to the Oaxaca Collections at the National Museum of Anthropology in Mexico City. As part of a PhD research in anthropology, we are analyzing the morphology of signs, colors and significance of the designs painted on these ceramic objects. This poster discusses the application and implication of certain painted signs and colors used as symbols representing basically different Mesoamerican gods related to funerary rituals, that could be identified by their closest reference: Mixtec and Borgia Group Codex. Both codex and ceramic vessels are cultural written documents, a way of understanding and apprehending the world at the late Postclassic time. Finally this study also helped to identify a specific artistic style of the Valles Centrales, a distinct stylistic and iconographic tradition that expressed, above all, the concepts of the religious, ritual and divinatory systems, beyond the general and undefined Mixteca-Puebla style.

COLOR MEANINGS - poster

EMERGING SIGNIFICANCE WITHIN THE CREATIVE PROCESS: THE PRIMACY OF COLOUR AS EMOTION

DIAS, Sarah Frances; DURÃO, Maria João

CIAUD - Centro de Investigação em Arquitectura, Urbanismo e Design,
Faculdade de Arquitectura, Universidade de Lisboa, LabCor-Laboratório da Cor da FAUL

ABSTRACT

The focus of the research is the emerging signification of the artistic creation through colour, observed and analysed through its representation processes within the creative process. Thus, the underlying research question is: 'Within the creative process, what is the role of colour and how is it used, in order to emerge significance and meaning?'. The research problem arises from the lack of a critical understanding of colour as a way of constructing significances for a work of art (be it in painting, or in the physical spaces of architecture), as well as understanding it as a significant tool for observation (criticism) purposes and for creation principles (composition), that embodies values and properties, transversal to all the arts. The relevance of the research is thus to construct, clarify and define a clearer understanding of the problematic of colour within the creative process of the different arts towards a clarification of the meaning and signification that from it emerges. Colour is understood as a 'creative tool' that defines and incorporates the embodied properties of the final constructed 'art work'. A transversal analysis, studying the different creative steps that use colour as a tool within the first stages of the design process, with the aim of clarifying links and connections between the different fields and establishing a common ground between them – paintings, drawings and watercolours. In order for an accurate analysis, a restriction is defined exclusively to the construction of atmospheres, organized in two main categories: corporeal and immaterial, the first defines physical colour spaces and atmospheres, and the latter will analyse colour focused on abstraction and intangibility. The research will prove that the common ground between them, allows for different mechanisms of significance to emerge according to the ways by which it is conceptualized. The work aims at uncovering new connections and patterns within existing field researches and studies, and to clarify structuring principles that define and compose the observed phenomena.

PROPUESTA DE ANÁLISIS SEMIÓTICO Y RETÓRICO DEL BINOMIO COLOR-FORMA EN DIBUJOS ANIMADOS Y SU APLICACIÓN EN EL DISEÑO VISUAL DE PERSONAJES PARA VIDEOJUEGOS EDUCATIVOS

ESPINOZA Colón, Jorge

Instituto de Diseño, Universidad Tecnológica de la Mixteca

ABSTRACT

En el desarrollo de videojuegos es importante estudiar del público meta sus principales gustos y preferencias en relación a contenidos audiovisuales, pues de ellos se pueden obtener referentes conceptuales y visuales para el diseño de nuevos personajes.

Considerando lo anterior, este trabajo describe una propuesta de análisis del binomio color-forma de los dibujos animados favoritos de niñas y niños a partir de la aplicación de conceptos tomados de la semiótica y la retórica, para obtener premisas de diseño que ayudaron a configurar personajes para videojuegos educativos.

El diseño de investigación consistió en la aplicación de una sesión de grupo para indagar la percepción sobre la caracterización y rasgos de personalidad de sus personajes favoritos. A partir de la técnica de análisis de contenido las respuestas se categorizaron en una matriz cuyas variables fueron las dimensiones del signo y sus niveles.

Se aplicó un estudio complementario que permitió comparar las impresiones (matriz semiótica) que las niñas y los niños tienen acerca de su personaje favorito con lo que es presentado en los dibujos animados. Para tal fin, se utilizó el esquema de Kenneth Burke, quien propone cinco vectores (acto, escena, agente, agencia y propósito) para identificar y analizar las estrategias argumentativas que hacen convincente a un personaje.

A partir del análisis se desarrollaron personajes que fueron evaluados por las niñas y los niños en el contexto del videojuego. Los resultados demuestran una experiencia de juego satisfactoria debido a que se percibió de manera fácil la relación entre el significado, propósito del personaje en las dinámicas del juego; y el significante, las características visuales y de comportamiento de los personajes.

COLOR MEANINGS - poster

COLOUR AS A MEANS OF COMMUNICATION IN FABRIC FAÇADES

GREGORIS, Chiara
University IUAV of Venice

ABSTRACT

The use of fabric in architecture dates back to ancient times. The Romans already used retractable structures (*velarium*), capable of adapting to different weather conditions, to cover amphitheatres. Today, fabric is used in façades, providing protection from sunlight and allowing the building to be “dressed up” in many different ways. In contemporary architecture it seems that the envelope has become increasingly important, yet, at the same time, also more and more ephemeral: the skin of the building is no longer simply the separation between inside and outside, but it is rich in meaning and becomes a means to communicate. The communication on the façade can be achieved in many different ways: images can be created using colour, light or through the movement of the elements of the façade itself. Canvas and colour have an unbreakable bond in many disciplines and architecture is not an exception: there are examples of colourful fabrics that cover buildings, giving them a new identity and creating recognizable landmarks in the area, both during the day, thanks to the use of iridescent colours, and at night through backlighting. However, the environment where this phenomenon is much more common is the city. Given the concentration of functions, buildings and people, it is the place more likely to become communicative. The most widespread example is that of the covers used as protection for scaffolding. The canvas is interchangeable and can be decorated with prints and advertising messages that can be replaced over time. This creates an ephemeral and temporary envelope capable of interacting with the urban environment through the dissemination of images. The aim of this paper is to deepen the issue of communicative façades that convey messages using the colours on the textiles and their relationship with their surroundings as a vehicle.

COLOR MEANINGS - poster

IDENTIDAD REGIONAL EN EL USO DEL COLOR EN RELACIÓN AL DESIERTO EN CIUDAD JUÁREZ, CHIHUAHUA

MEDINA García, Emma Angélica
Universidad Autónoma de Ciudad Juárez

ABSTRACT

El uso y aplicación del color en las edificaciones y espacios interiores, puede estar relacionado al medio ambiente en algunas culturas como generado de identidad regional. Ciudad Juárez, localizado en el desierto, al norte del estado de Chihuahua, está influenciado por el contexto de una gama de colores que se aprecia el visitante al llegar a dicha ciudad.

ARTS - poster

REVESTIMIENTOS CERÁMICOS DESDE EUROPA A ARGENTINA Y SUS ESPACIOS DE USO ENTRE 1850 Y 1950

ESTÉVEZ, Silvia María
Environmental Color Design Group, AIC

ABSTRACT

Durante un siglo llegaron a Argentina especialmente a Buenos Aires los revestimientos cerámicos procedentes de Europa. Primero llegaron como lastre en los barcos, luego como objetos de decoración.

Existen tres períodos de tiempo definidos que se expresan en tres espacios de nuestro entorno Arquitectónico: Cúpulas, Zaguanes y Patios..

Finalizado este tiempo comenzaron a surgir las Fábricas nacionales de revestimientos.

LOS TRES ESPACIOS DEL ENTORNO ARQUITECTÓNICO

1- El brillo a la luz del sol.- CÚPULAS y ALJIBES

Especialmente utilizado en espacios exteriores, desde 1850 a 1880, los azulejos "Pas de Calais" llegados desde Francia en colores predominantes azul y blanco.

2- La intimidad del hogar- ZAGUÁN Y BAÑO

El zaguán, era el acceso de las viviendas, de.1880 a 1914, desde Holanda, Inglaterra, Bélgica y Alemania, se expresan en una amplia gama de colores y transparencias.

En conjuntos de varias piezas, con relieves y brillo. Diversas técnicas, calcos, serigrafías y monocromos. El baño comienza a ser revestido de blanco.

3- Profusión de color- EL PATIO ANDALUZ

Con la celebración del Centenario de la Revolución de Mayo, se vuelve a mirar hacia España, desde 1910 hasta 1950, nos llegan los patios con sus raíces Árabes en los diseños y las aristas casi alicatadas. Se complementaban con murales historiados, de acento Italiano y el predominante azul.

El azulejo fue creado para formar parte de un todo, hay muy pocos ejemplos de piezas aisladas; hay un claro ordenamiento de la totalidad de las partes.

Cada azulejo cumple una función y entre sí unidos comunican un mensaje.

El mejor modo de experimentarlos es verlos y tocarlos en uso, en un zaguán, baño o patio, esa experiencia es necesaria para comprender el concepto del azulejo.

COLORS USED BY TWO ARGENTINEAN PAINTERS

Puccio, Carmen
Argentina

ABSTRACT

From the works of two Argentinean artists who have very different conceptions of the use of colors and shapes, an analysis was performed, whose goal is to understand the use of color and shape. Both vary not only according to the criteria and ideals of their lives but in line with the country and the historical moment in which they live.

Antonio Berni (1905-1981), enriched the field of Visual Arts with new techniques, the use of color in his pictures varies according to the trends he experienced. His palettes are subject to emotions, as we will see in this work. This artist is dedicated to closely observe the extreme poverty of the 1930s Argentina and performed his works, as testimony to this reality, denouncing the economic and political situation of the country. Committed artist, controversial politician, he is considered one of the most important artists of the twentieth century in Argentina. The year after his death The Konex Foundation awarded him with the most relevant honor dedicated to the visual arts affirming: 'For Antonio Berni painting is a form of love to pass the years in art'.

Alejandro Xul Solar (1887-1963). His production is characterized by originality. He shared his artistic interests with Jorge Luis Borges and Emilio Petorutti, was an eccentric artist of great culture and simple manners. He generally used colors based on his studies of the European avant-garde from the 30s and 40s. He created strange landscapes and original designs, full of fantasy, which enlightened his studies: Theosophy, mysticism and astrology. He designed imaginary future cities, used geometric shapes and symbols, saturated colors with a freshness that makes his work easily recognized by the peculiar language that characterizes it.

The end result will compare both painters by the use of color in their works.

ARTS - poster

THEORETICAL ANALYSIS OF ISHIHARA COLOR PLATES UNDER SPECIAL ILLUMINATION CONDITIONS

SAKAMOTO, Takashi; TAMURA, Shigeharu
National Institute of Advanced Industrial Science and Technology (AIST)

ABSTRACT

The Ishihara test is the most widely used screening test for color vision defects. Tamura et al. found that some color combinations of LEDs improved numeral identification in the Ishihara test for deuteranopic observers, but the cause of this phenomenon was not theoretically analyzed. In this presentation, the authors report the results of theoretical analysis of the color plates used in the Ishihara test under three types of LED illumination and illuminant D65. The sRGB (specified in IEC 61966-2-1:1999) values of Ishihara plates were measured using a calibrated flatbed scanner, and they were translated to CIELAB values under illuminant D65. CIELAB values under three types of illumination, using white, red, and blue LEDs, were also calculated on the basis of the report by Sobagaki (1984). Deuteranopic vision was simulated by a chromatic vision simulator (Asada, 2011) that was developed using the Hunt–Pointer–Estévez cone fundamental space (Hunt, 1995) and a bent projection plane proposed by Brettel et al. (1997). The above-mentioned simulator was used to generate sRGB images of a deuteranopic observer's sight, and corresponding CIELAB values were calculated from those sRGB images. The CIELAB values of Ishihara plates were classified into two categories: figure colors and ground colors, and color differences and geometrical arrangements of these two categories were analyzed in CIELAB color space. The theoretical analysis results were as follows: clusters of figure colors and ground colors under illuminant D65 were not separated in CIELAB color space. Conversely, clusters of figure colors and ground colors under the three types of LED illumination were separated clearly in CIELAB color space. This may explain why illuminations (1), (2), and (3) yielded better distinction for deuteranopic observers.

ARTS - poster

ACROSS DISCIPLINES, ACROSS CULTURE; CONTEMPORARY APPROACHES TO TEACHING COLOR IN THE VISUAL ARTS

SULLIVAN, Katherine

Department of Art and Art History. Hope College
Holland, Michigan, USA

ABSTRACT

This presentation will explore methodologies and trends in teaching color theory to students of art and design. As a subject of inquiry in the social and natural sciences, cultural studies and the arts, the phenomena of color spans periods and crosses disciplines. From early philosophical and scientific texts such as Aristotle's *de Coloribus* and Newton's *Opticks* to the instructional guides of Munsell, Itten, and Albers, how have conceptions of color (and its importance) impacted curricula and pedagogical approaches to training artists? An established area of investigation in most studio curriculum foundation courses, color is inherently interdisciplinary and global in its scope. This paper will present an evolving model of teaching color that attempts to engage students' varied backgrounds and diverse cultural experiences to present a more nuanced approach to thinking about color in the arts and beyond..

EDUCATION - poster

THE STUDY OF COLOR IN ACADEMIC DESIGN ACTIVITIES AND ITS CHALLENGES TO UPDATE CURRENT EDUCATIONAL PROGRAMS

BREÑA Sánchez, Matilde
Escuela de Diseño del INBA, México

ABSTRACT

As a result of the changes that modern societies have experienced since the development of digital technology, education research is currently seeking to renew and adapt the overall objectives of education. In the meantime, societies are demanding adequate adjustment of higher education to the social needs and working practices. For these reasons, it is relevant to think about the appropriateness of educational contents, teaching and learning methodologies and the objectives and the adequacy of educational programs. Within this framework, I set out to discuss issues such as the subject matter and contents that have been taught in color courses in design educational programs, and analyze its changes and transformation as a result of the era of digital technology; somehow, frequently reducing the color to a mere visual element, of which it is important to learn some basic rules of combination, codification and instrumental use. Nevertheless, the complexity of chromatic phenomena offers a number of possibilities which are useful to the processes of teaching and learning that transcend the pragmatism of its use, which contribute to the development of cognitive and manual dexterities which nowadays have a special value.

With the objectives of identifying and limiting these possibilities to a tractable number which, in addition, should be in harmony with our current thought and knowledge of the design field, I develop and discuss issues which are both relevant and common to the principles of epistemic research of design thinking, the competency-based learning models and a number of studies on color carried out from different perspectives of knowledge. Therefore I have broadened the color study, at the school of design, to the interpretative sciences and cultural studies, emphasizing the potencial that its study holds to the development of some essential competencies for design practice, in accordance with the research about design.

IMPORTANCIA DEL COLOR EN LOS MATERIALES DIDÁCTICOS APLICADOS A LAS NUEVAS TECNOLOGÍAS PARA LA ENSEÑANZA

PIER Castelló, María Luisa; LOZANO Castro, Rebeca Isadora;
GARCÍA Izaguirre, Víctor Manuel
Universidad Autónoma de Tamaulipas

ABSTRACT

La intención de la presente investigación es hacer una reflexión sobre los lineamientos a seguir en la realización de materiales didácticos, conjuntando dos aspectos muy importantes de la enseñanza en nuestros días; el color; que desde su descubrimiento ha permitido a los seres humanos expresar sus ideas y sentimientos así como su nivel de importancia, y el uso de las nuevas tecnologías en el aula. Actualmente los alumnos tienen una gran oportunidad de acceder al manejo de la tecnología, y para ellos, esta herramienta tiene un atractivo muy importante, ya que desde una edad muy corta forma parte de sus vidas, así que debemos valernos de esta oportunidad realizando de manera más eficiente el proceso de enseñanza-aprendizaje, empleando correctamente los elementos del diseño y aplicando como base de los mismos, la teoría del color, ya que esta es una herramienta sustancial a la hora de transmitir información no verbal. Muy comúnmente a la hora de elaborar nuestro material nos centramos en la parte teórica, es decir la información, pero ¿Qué pasa con la presentación que le damos a la misma? ¿Podemos correr el riesgo de perder esa información entre los errores que distraen a los receptores?, en nosotros está el crear materiales didácticos que ayuden a la comprensión de los mismos de una forma natural y fluida, proporcionando así una enseñanza significativa, y esto lo podemos lograr mediante la correcta utilización del color. En nuestros días donde el uso de las nuevas tecnologías nos está permitiendo acceder a los alumnos y no necesariamente de manera presencial, debemos hacer acopio de todas las herramientas que estén en nuestras manos para acortar ese espacio físico que nos separa, y sin duda el color adecuadamente aplicado en nuestros materiales didácticos resulta ser una opción inmejorable.

EDUCATION - poster

RED LIGHTING DOES NOT HAVE A NEGATIVE EFFECT ON INTELLECTUAL PERFORMANCE OF JAPANESE STUDENTS

TAKAHASHI, Shin'ya
Tokaigakuen University

ABSTRACT

Following the last presentation (Takahashi, 2013), in which the effect of briefly watching red color printed on paper upon intellectual performance was examined, the present study retested the red effect by using different way of color presentation; color lighting. Sixty Japanese university students were divided into three groups; white, red, and blue groups. They took two sets of 20-item numeric subtest of the Intelligence Structure Test (IST), a German IQ test (Beauducelet al., 2010). For each item, a sequence of seven numbers was given with the final number unspecified (e.g., 18, 16, 19, 15, 20, 14, 21, ?); the task is to find the final number (the correct answer: 13). All participants took the first set under the white lighting. Then, after a short rest, they took the second set under the assigned color lighting (white, red, or blue). White lighting was made by white fluorescent lamps. Red and blue lightings were made by color beam bulbs (National BF110V 80W-R, -B). Chromaticity of the top surface of a table in front of participant, which was covered with white paper, was $x = .668$, $y = .320$ under the red lighting, and $x = .140$, $y = .201$ under the blue lighting. Illuminance measured on the table was 470 lx under all lightings. Time allowed for each set was 3 minutes. After finishing two sets, participants answered short questionnaire asking how they are satisfied with the results, how they felt tired, relaxed, concentrated, and so on. As the results, color lighting did not have any effects on the test performance nor on the participants' self-evaluation. Taken together with the null results obtained in the previous study (Takahashi, 2013), a negative effect of red color would not be applied to the Japanese young people, suggesting its nature of cultural dependency.

EVALUACION DEL TIPO DE SOLVENTE EN EL RENDIMIENTO DURANTE LA EXTRACCIÓN DE COLORANTE NATURAL DE LA CASCARA DE TUNA MORADA (*OPUNTIA FICUS*)

ESPINOZA Silva, Clara Raquel; HUAMAN Cóngora, Lucía
Universidad Nacional del Centro del Perú

ABSTRACT

La tuna (*Opuntia ssp.*) fruto de color morado, que crece en el Departamento de Ayacucho presenta pigmentos betacianicos, inclusive en la càscara por lo que el objetivo del presente trabajo fue utilizar la càscara que usualmente se desecha para extraer pigmento evaluando el tipo de solvente y estabilidad a la temperatura y almacenamiento. Las tunas estudiadas tuvieron un 48,7% de càscara con un contenido de humedad de 89,02, proteínas 0,36%, grasa 0,18%, fibra 6,99%, ceniza 6,99%, grasa 1,62% y carbohidratos por diferencia 1,83%, contenido de betacianinas de 80,575 mg/100g de càscara y betaxantinas de 8,66 mg/100 g de càscara. El solvente con el que se obtuvo un mejor rendimiento para la extracción de betalainas es el agua. El contenido de betalainas en los extractos acuosos se degrada a medida que aumenta la temperatura manteniéndose más estable a pH 4,5. Las betalainas se mantienen mejor a 4°C comparado con los de 24 °C, siendo más estable a pH de 4,5 ; teniendo el mismo comportamiento la capacidad antioxidante y compuestos fenólicos totales.

TINCTS AND DYES - poster

EFFECTO DEL CAMBIO DE PH EN EL COLOR DE UN CHAMPÚ ELABORADO CON GRANA CARMÍN

ARROYO Figueroa, Gabriela; HERRERA Méndez, Carlos Hernán;
VARGAS Rodríguez, Lorena; VELOZ García, Rafael Alejandro
Universidad de Guanajuato

ABSTRACT

El ácido carmínico es el poder colorante obtenido del insecto grana carmín, conocido también como grana cochinilla, este puede ser empleado en productos cosméticos como el champú. El ácido carmínico tiene la propiedad de que cambia la coloración dependiendo del pH de la solución. Para soluciones ácidas el color tiende al rojo, para soluciones alcalinas el color tiene al morado. El objetivo de este trabajo fue determinar el efecto del cambio de pH en el color de un champú elaborado con grana carmín. Para lo anterior se elaboró un champú ácido a un pH de 5.0, al que se ajustó el pH a 6.0 y finalmente a 7.0, por medio de una solución diluida de hidróxido de sodio. Midiendo el color en la escala CIELab*, para cada uno de los valores de pH. Se observó cambio principalmente en la coordenada b* (amarillo (+)-azul (-)), ya que al aumentar el pH disminuyó el valor numérico de la coordenada b*, acercándose a un valor negativo, es decir tendiendo al azul. Se concluyó que el cambio de pH tiene un gran efecto en el color del champú, este trabajo será de gran importancia para formulaciones en donde se aplique el colorante natural grana carmín.

TEJIDOS Y BORDADOS TZOTZILES CON MOTIVOS HIPERFRACTALES

FERNÁNDEZ-GUASTI, Manuel; HERNÁNDEZ Hernández, Diego
Lab. de Óptica Cuántica, Depto. de Física,
Universidad Autónoma Metropolitana - Iztapalapa, México

ABSTRACT

Desde tiempos remotos las mujeres han realizado el telar de cintura para confeccionar la ropa de la comunidad. Al tejido liso se han ido agregando motivos y colores específicos de cada pueblo. Algunos motivos típicos de los Altos de Chiapas son el *sp'ejel-luch* en la región de San Andrés Sakamch'en, el *ton-luch* vinculado a las piedras, *ch'ix-luch* basado en las plantas, puntax que es un bordado punteado, max que es una figura similar a un mono. Respecto a los colores, unos ejemplos representativos son *tzoj* (rojo) e *ik'* (negro), tradicionales de Sakamch'en, Yaxkulan (un tipo de morado) típico de Santa Magdalena, *sak* (blanco) e *ik'* (negro) tradicionales en San Juan Chamula. En la actualidad, tanto los hombres como las mujeres participan en las actividades de tejido y bordado. Cada vez se utilizan con más frecuencia combinaciones atrevidas de colores más sin embargo, los motivos han permanecido.

En la presente propuesta, se incursiona en la incorporación de estructuras hiperfractales fusionados con los tejidos tradicionales chiapanecos. Los fractales discretos se obtienen por medio de iteraciones, en particular, es notable la iteración cuadrática en el plano complejo. Recientemente, se han desarrollado álgebras en espacios hipercomplejos que generan conjuntos fractales en espacios de tres o más dimensiones. La frontera de dichos conjuntos es extremadamente rica así como la estructura de las velocidades de escape en la vecindad de dichas fronteras.

En la fusión de éstos dos saberes, el indígena milenario y el matemático abstracto, se trata de incorporar el manejo de color tradicional con los motivos fractales. La incorporación de distintos colores y combinaciones depende fuertemente de la región donde labora el artesano y más aún de su propia sensibilidad.

TINCTS AND DYES - poster

LA IMPORTANCIA DE LOS COLORES NATURALES PARA LA CULTURA MAPUCHE EN CHILE

PAILLAMIL Antiquero, Ana L.; FUENTES Lizama, Carolina A.
Asociación Indígena Wallontu Witral;
Universidad Católica de Temuco

ABSTRACT

La región de La Araucanía en Chile, es reconocida por su naturaleza virgen y por los diferentes sitios de valor para la conservación de la biodiversidad, así como por la presencia activa de la cultura Mapuche en su territorio. Actualmente, existen organizaciones de mujeres indígenas que producen textiles tradicionales Mapuche elaborados a través de técnicas de teñido y tejido que han sido transmitidas de generación en generación y que permite a las mujeres que la producen, contribuir con la generación de ingresos complementarios en su hogar a través de la comercialización de sus productos. Sin embargo, estos tejidos forman parte del acervo cultural de un pueblo que sobrevive en el sur de América Latina y que lucha por conservar, preservar y transmitir sus tradiciones a las nuevas generaciones. Los textiles tradicionales de los cuales trataremos, son realizados con lana de oveja y teñidos con vegetales y minerales típicos de las zonas de La Araucanía, al sur de Chile, por mujeres de la Asociación Indígena Wallontu Witral, que cuenta con cerca de 180 productoras textiles. La importancia de su trabajo, y que nosotros queremos compartir y difundir, es el uso de elementos de la naturaleza para la obtención de colores únicos, entre los que se encuentran cortezas de árboles, hojas, flores, frutos, barro y piedras, destacando el uso del barro y piedra mallo para la elaboración de la manta cacique tradicional, símbolo de fuerza, poder y riqueza dentro de los cacicazgos en La Araucanía. Con la utilización de los elementos del entorno es posible crear una paleta de color única que nos habla de la exquisita riqueza cultural y material que el entorno nos puede proveer y que forma parte de nuestra identidad como pueblo latinoamericano. A través de esta presentación queremos compartir nuestra experiencia de trabajo con las productoras de textiles ancestrales en la recuperación de los colores naturales que forman parte de la tradición Mapuche y que son fundamentales para la supervivencia de su cultura en el tiempo.

ALQUIMIA DE COLOR

RANGEL Vázquez, Nallely
Asociación Mexicana de Investigadores del Color

ABSTRACT

Hay un cambio, una metamorfosis en la tela, un segundo nacimiento del tejido que lo define, incluso, más allá de su confección final. Sucede en el proceso acuoso, en un mar de tinte. Esta segunda vida e identidad la tela la recibe del pigmento. ¿Qué nos hace asociar una tela más a su color que a su forma? Más allá de las connotaciones psico-sociales, esto se debe a su identidad adherida, al pigmento con que fue teñido; puedo afirmar que el tejido tiene un alma, y que esta alma es su color.

¿Por qué llamamos crudo al algodón, antes de pasar por el proceso del teñido? El tejido y las fibras en su baño de pigmento también mutan, renacen y se reinventan.

La solución, lo líquido brinda libertad: la trama juega con la capilaridad, explora sus capacidades; el color tiene voluntad propia, explora con intensidad e intensidad; teñir es poesía sin palabras, su sonido es color, sus versos los tonos.

La fusión durante el teñido acepta el azar y lo conjuga con el medio ambiente, pende de un hilo: su densidad y su fibra, la temperatura de la solución y la pureza del solvente.

El teñido de telas significa alquimia. Qué hacían los alquimistas si no mezclar lo sólido con lo líquido, proceso químico-mágico. El pigmento, y la solución que lo contiene, penetra las fibras, simbiosis y mimetismo, "piedra y agua" hechizan el tejido; tela y color se vuelven uno, envejecen juntos, como el cuerpo y el alma.

Si el artista textil juega con el experimento y con la libertad del pigmento y crea una pieza única, el diseñador textil promueve ese accidente y ése es su interés por estudiar y trabajar con el teñido de fibras: diseñar con lo imposible, lo original, la alquimia.

PSYCHOLOGY AND PERCEPTION - poster

THE PERCEPTION OF THE COLOR ON THE TRADITIONAL COLOMBIAN FOOD PRODUCTS

KADAMANI Abiyoma, Samira; QUIJANO DE RINCÓN, Amparo

Associate Member AIC - Association Internationale de la Couleur.

SIOF - Società Italiana di Ottica e Fotonica.

Italian Branch of the European Optical Society

ABSTRACT

The code from the color is founded in every field from human daily basis, sending different kind of messages that every single person should interpret it. There is doubt the gastronomy does not scape to this code and the colors make, on a very important function on this discipline.

Therefore and be conscious from the actual gastronomic "Boom" who lives the cuisine in worldwide and the appearance on new trend in Design and composition with food (Food Design), we have developed in a multidisciplinary class "Color, Color y más Color", that given at Los Andes University in Colombia. On the practical exercises, apply it on the meaning of the from the traditional Colombian cuisine, searching that the students use the color palette on the local gastronomy, making new perceptive experiences who allows live by their own by making a performance with some traditional intervene plates with new chromatic componenets, comparing and analyzing the "memory taste" and the reaction from the guests in front a new experience.

The intention from these exercises is to know mainly, the reaction from the guest in front of a new presentation of a traditional food plate intervene with new chromatic suggestion, but without any change of the original flavor from the traditional food products, without forget that color it is a language as way of communication that shares a particular meaning creating new stance in front of a traditional image from determinate plate and there is no doubt, when color from a common food product is change, the communication of this also change, so then this exercise helps to open new research fields and an chance on consuming market.

The conclusion taken from those exercises, the will allow evaluate the possibility to get an important change in the traditional image that Colombian traditional food plates culturally have.

COMPARATIVE ANALYSIS OF PHYSIOLOGICAL AND PSYCHOLOGICAL RESPONSES UNDER DIFFERENT COLOR ENVIRONMENTS BY CULTURAL DIFFERENCES OF TEST PARTICIPANTS

KIM, Hanna; LEE, Jinsook
Asociación Mexicana de Investigadores del Color

ABSTRACT

Color has its own unique wavelength, and the physical factor that has a major impact on physiological and psychological health of human beings. Study result of psychology evaluation by color stimulus shows different results by cultural differences of test participants. However, even if the result of psychology evaluation varied due to cultural differences, there is no concrete study done on whether there will be a difference in physiological response or not. This study analyzes the existence of meaningful difference between Korean and Chinese by measuring physiological and psychological responses for color. For the test method, actual size Mock-up was made to conduct brainwave tests from different color rooms (painted in Green, Blue and Red) for 5 Korean and 5 Chinese test participants in ages between 20 to 30 years. For electrodes, ten-twenty electrode system was applied and total 8 electrodes were affixed on prefrontal (Fp1, Fp2), the frontal lobe (F3, F4), parietal lobe (P3, P4) and the occipital lobe (O1, O2). The measurement sequence was 5 minutes resting, 5 minutes and 10 seconds from the Green room, 5 minutes and 10 seconds from the Blue room, 5 minutes break, and 5 minutes and 10 seconds from the Red room, and repeated this sequence for 3 times to obtain reliable data. After the brainwave test, test participants had 30 minutes rest and conducted for psychology evaluation. For the psychology evaluation, total of 16 evaluation adjectives were presented to test participants and asked to rate them in 7 grades. Test results were analyzed based on 8 analysis indexes to compare the levels of the brain activation, relaxation, arousal and concentration. Furthermore, based on the result of the brain activation mapping of brainwave analysis index, this study has conducted an analysis to identify any difference in active site by color stimulus.

PSYCHOLOGY AND PERCEPTION - poster

EVALUATION RESEARCH ON DIFFERENCE BETWEEN COLOR APPEARANCE FOR EACH FABRIC UNDER LIGHTING WITH VARIABLE COLOR TEMPERATURE

LEE, Eun Jung¹; OSUMI, Masayuki²

¹ DongDuk Women's University, Department of the Fashion Design

² Office Color Science Co.,Ltd.

ABSTRACT

In apparel shops, clothing products are displayed under various lighting color setups. These lighting setups, according to each concept of stores or brands, are much highly affected. Under these circumstances, what to buy among displayed clothing products is chosen through the comparison within images. Consumers are considered that they make their choices with steady and stable comparison between several items. With more details, lighting color for clothing items is changeable along the zone where-else clothings are displayed. Also, based on the clothing image under these lighting setup, the situation for consumers to think about which clothing items are proper to choose is the one good comparison example. For our experiment, Pieces of flat-surface cotton broad cloths of 10 sum colors; RED, YELLOW, GREEN, BLUE, PURPLE in both vivid and pale tones were used as the experimental samples.

Two types of LED lamps, a white LED with a color temperature of 5000K and a yellowish-color LED with a color temperature of 2800K, were used as the illumination in the experiments. The experimental procedure is as follows. First, the colors of the cloth samples are determined by visual colorimetry using the Munsell color chips under the white illumination with a color temperature of 5000K as the standard. Next, the cloth samples are placed under the yellowish-color illumination with a color temperature of 2800K to carry out color matching of the appearances with the Munsell color chips under the standard illumination. The tendencies of color changes due to the illumination are studied by the differences in color values obtained in this way. The selection of 13 adjectives to be used for the sensory evaluation of the color impressions have been shown, and it has been clarified that the adjectives are appropriate for the use to the impression evaluation by the SD method. Subjects for the experiment were 30 women of age of twenties with normal vision.

In this researched manner, it is highly considered that to interpret the colors of clothing products under lighting setup and evaluate these color appearance bears so much important meaning. The estimated data values, calculating CIECAM 02 and its parameter from either the experimental Munsell color chart and actual measurement (KONICA-MINOLTA CM 3600d) for fabrics or the actual measurement of LED light spectral distribution(TOPCON SR-3AR), were interpreted through the contrast and comparison method applicable for the output data values estimated by the experiment of the visual color matching.

A STUDY ON COLOR EMOTION OF TWO COLOR COMBINATION USING ACHROMATIC AS MAIN COLOR

GONG, Shi-Min¹; LEE, Wen-Yuan²

¹ The Graduate Institute of Design Science, University of Tatung, Taiwan

² Department of Industrial Design, University of Tatung, Taiwan

ABSTRACT

In recent years, more and more achromatic color as the main color appears in the color design of product. However, some secondary colors were used on the product, such as buttons and the dividing line.... It is doubtful whether the secondary color will be the key factor impacted on color emotion.

The current study carried out a psychophysical experiment. Thirty-two participants with an average age of 21.2 years old took part in this experiment, including 13 male and 19 female. Each observer was asked to assess two-color combinations on 3D color configuration on 6 scales, including "harmonious-disharmonious", "active-passive", "heavy-light", "warm-cool", "soft-hard", and "complex-simple". To produce three-dimensional color configuration, side circle shape applied onto the cuboids was used. The main color was applied onto the cuboids shape, secondary color on side circle. To produce two-color combinations, white, black and gray colors as main color, 11 basic color terms according to Berlin and Kay (red, orange, yellow, green, blue, brown, purple, pink, white, black and gray colors) were selected to be second color. Each color was produced according to their boundaries in CIE Lab space proposed by Lin et.al. Totally, 54 color combinations were produced. Each experimental sample was displayed in a viewing cabinet and illuminated by a D65 simulator in a dark room. The viewing distance was about 45 cm with a 45/45 illuminating/viewing geometry.

The results showed that color combinations with white color as main color were more active, more harmonious, softer, warmer, simpler and lighter than gray and black. "Chromatic-achromatic combinations" were tended to be active, soft, warm and complex. And "achromatic-achromatic combinations" were tended to heavy and harmonious. The results were systematically summarized in this paper, attempting to provide product designers suggestions of color combination with achromatic colors as main color.

PSYCHOLOGY AND PERCEPTION - poster

COLOR CONTRAST IN NATURAL SCENES UNDER DAYLIGHTS WITH DIFFERENT CORRELATED COLOR TEMPERATURES

NIEVES, Juan Luis; ROMERO, Javier; NASCIMENTO, Sérgio M.C.
Universidad de Granada

ABSTRACT

Image contrast, such as luminance and color contrast, represent important information in object recognition. But the object colors depends also on both the spectral reflectance of the surfaces and the spectral power distribution (SPD) of the light impinging on them. It has been argued that our human visual system is adapted to natural stimuli to code the visual inputs it receives. The main objective of this work is to quantify the contrast changes under daylight illuminant changes. Many studies have been concerned with measuring contrast in images but only few studies have addressed the influence of daylight in the contrast perceived. We used different hyperspectral images to simulate them under daylights with Correlated Color Temperatures (CCT) from 2,735K to 25,889K, and computed a Weber-based image contrast under those CCTs. Our results in the CIEL*a*b* color space suggest that a* chromatic component captures most of the daylight changes with L*- and b*-components being stable. This result will be analyzed in terms of the simulated scenes being natural or artificial and thus containing more luminance- or color-defined features.

FEELIPA, COLOR CODE FOR VISUALLY IMPAIRED PEOPLE

PIRES, Filipa Nogueira
Portuguese Colour Association

ABSTRACT

Color is in everything that surrounds us, from landscapes, to furniture, appliances and machines, clothing, traditions and people. Colors convey us sensations, feelings, and information. Of its intrinsic characteristics, color is an interpretation of a sensation received by brain; it is an effect of light; it is the property of the surface of an object; it does not depend only on external factors, since it is a part of our conscious, unconscious and subconscious, and may influence our behavior.

However, there are people who cannot make the full or correct apprehension of color, such as the blind, color blind or visually impaired. This issue has been the subject of several investigations in recent years, in various scientific areas. Nevertheless, a color code that allowed anyone, carrier of any kind of visual impairment, to identify, recognize and use colors, had never been developed until now.

The main objective of this research project focused on the creation of a color code where colors are associated to basic geometric shapes, which are part of the general knowledge of every individual. The result was Feelipa Color Code. Through relief, the code allows anyone to identify and read the chromatic properties of objects, regardless of their visual limitations, making that person able to see/feel colors. Therefore, it is an inclusive and universal color code.

This study was supported by a user-centered and participatory design methodology, by resorting to sample groups. The code went through a phase of evaluation and validation by different users, who recognized not only that the code allows for easy identification of colors, but also that it is a real asset to a more independent and inclusive life for all. Feelipa is a unique color code that has the ability to be applied in countless types of media, across various sectors.

EVALUATION OF BILLBOARD LIGHTING FOR YOUNGER AND ELDERLY VISUAL ACUITY OF THAI LETTERS

TANGKIJVIWAT, Uravis
Rajamangala University of Technology Thanyaburi

ABSTRACT

An increase in the elderly population is the urgent issue in Thailand. According to an estimate made by the office of the national economic and social development board, Thailand will become to aged society in 2025. One of the serious problems of the visual performance of the elderly comes from the cloudy crystalline lens of the cataract. Cataract is a clouding of the lens that produce an overall haze, resulting in the deteriorated visual acuity and contrast sensitivity, and the increased sensitivity to glare. Since a visual performance of the elderly deteriorates, the proper infrastructure of the visual environment is one of the urgent matters. It is well know the usage of billboards is one of effective strategies in advertisements. According to a new market report published by MarketsandMarkets, the global market of billboard advertising is expected to reach 12.5 billion dollar in 2016 at estimated CAGR of 5.7% from 2011 to 2016. Several factors are said to be responsible for visual acuity. Due to visual performance and saving energy aspect, this study aims to investigate a minimal requirement of illumination for a billboard. Thai letters charts in negative contrast and positive contrast were used for visual acuity test. The letters were presented on the simulated billboard and projected by adjustable illumination. Two-room experiment technique was used for independently controlling the illumination of each room. The experimental conditions included combinations of three illuminance levels of the room and three illuminance levels of spotlights. Both of younger and simulated elderly visions were carried out. Cataract experiencing goggles are the goggles made of filters that simulate the properties of cataract eyes. Expected experimental results will show the effect of spotlight illumination on visual acuity. The proper illumination for both visions will be explored. Furthermore, a comparison between younger and elderly is also revealed. Our result might be a basic knowledge to design billboard lighting.

DISEGNO VERSUS COLORE: INTERACTIONS BETWEEN IDEA AND PRAXIS

DURÃO, Maria João¹; MOUTINHO, Natacha Antão²

¹ CIAUD-Centro de Investigação em Arquitectura, Urbanismo e Design,
Faculdade de Arquitectura, Universidade de Lisboa

² Universidade do Minho

ABSTRACT

This paper addresses some topics inscribed in an ongoing research project carried out within a PhD programme in Drawing at the Lisbon School of Fine Arts. Drawing is usually considered a privileged means of communication within any design activity with a multiplicity of functions and serving as imagination catalyst as well as a tool for achieving solutions to an architectural design problem. Drawing tends to be considered an achromatic representation with shades, tones and different levels of saturation of black varying according to the graphic tools used to render lines, edges, or light and dark. Usually colour in drawing associates its use to illustrative representations of reality. In order to comprehend the underlying reason for such an understanding of the use of colour in drawing and in one needs to look back to the history of drawing and its relation with colour. In painting, the disegno versus colore debate on whether drawing or colour was more important led to a differentiation between Florentine and Venetian painters in the Italian Cinquecento. Whereas the former started their work with sketches on paper, to work out the details of the composition in careful drawings and then transferred to the canvas the drawing to be coloured in, the latter painted on the canvas directly and were criticized for not drawing well. This debate went on through to Poussinistes and the Rubenistes in the French Academy in the 1660's and 1670's. Roger de Piles, the spokesman of the Rubenistes, pointed to the problems that painters faced by claiming that during three hundred years since the revival of painting, few painters had used colour well due to the inexistence of a very precise body of rules, contrarily to what happened with drawing that had rules based on proportion, anatomy, and the human figure. Drawing as a design tool for architecture finds its roots in the Renaissance, when disegno was largely spread and its development led to the establishment of a theoretical field to encompass its modern and present definition which includes the design of a concept or presentation of an idea. Drawing was disconnected from materiality and from its primordial perception: colour. This new status separated drawing from its connotation with manual activities of the workshop and overall practical work, and instead, centred it on mental activity – referring it to actions of the mind. Disegno was linked to the domain of the 'idea' where there is no matter and hence, no colour. It is in such interactions between idea and praxis concerning drawing and colour that lies the nuclear contribution of this paper.

COLOR AND DESIGN - poster

PHYSIOLOGICAL AND PSYCHOLOGICAL EFFECTS OF WHITE OR OFF-WHITE BASE COLORS OF A HOUSE INTERIOR

Comparative study of the elderly and the young under high and normal illuminance levels

MASATO Sato, Marie Nio
Kyoto Prefectural University

ABSTRACT

In recent times, white or off-white colours have often been used as base colours on ceilings or walls of house interiors. However, the psychological and physiological effects of white or off-white base colours on residents of houses have not been investigated.

The authors have conducted to evaluate the psychological effects on the elderly and the young using computer-generated (CG) images. However the validation experiments in the actual spaces are required.

This study was conducted on the elderly and the young to evaluate the physiological and psychological effects of white or off-white base colours of a house interior in an actual experimental space.

A series of experiments were carried out in the actual experimental space. The experimental factors, each of them having two experimental levels, were the colour of the wall (N9.5 and 5Y9/1.5), the colour of the floor (N8 and N6) and the illuminance level (750lx and 5000lx). There were eight experimental patterns made up of a combination of these factors.

The measurements used were the cerebral blood flow, the HF/LF ratio, the heart rate and subjective appraisals.

The subjects consisted of twelve young people and twelve elderly people.

To clarify the relationships between the physiological and psychological measurements and the experimental factors, analyses of variance were conducted.

The results are summarized as bellows.

1) The cerebral blood flow increased significantly under the conditions of the 5Y9/1.5 coloured wall. This means that the activity of the brain is higher under the conditions of the 5Y9/1.5 coloured wall.

2) The HF/LF ratio increased significantly under the conditions of the N9.5 coloured wall. This indicates that the degree of tension is higher under the conditions of the N9.5 coloured wall.

3) The results of subjective appraisals supported the results of physiological measurements.

THE IMPACT OF COLOR AND LIGHTING COMBINATION ON PERCEIVED BRAND IDENTITY: A CASE STUDY OF BANK BRANCES IN THAILAND

TANTANATEWIN, Warakul; INKAROJRIT, Vorapat
Faculty of Architecture, Chulalongkorn University

ABSTRACT

Nowadays, Thailand's commercial banking business is highly competitive because each bank wants to increase its share in the banking market. Renovation of interior environment of the commercial banks' sub-branches is one of the marketing strategies that were used to attract customers. The ultimate goal is to create a unique brand identity as well as to increase brand visibility. In order to accomplish the renovation's goal, vivid colors were used in interior decoration. While previous studies have identified that color and light affects brand identity and visibility, the effect of color usage on brand identity had not been identified, especially in Thailand. Therefore, the objective of this research is to understand the effectiveness of color and light usage in interior space of the commercial banks' sub-branches on the perception of identity. In this study, the perception of building occupants toward the bank's brand identity, the physical characteristics, and the mental concept were surveyed. The experiment was evaluated bank environments using eleven pairs of adjectives through semantic differential scaling method. The color and light variables are vivid colors (yellow, blue and purple; the colors that are currently used by the major Thai banks), lighting arrangements (general and accent lighting), and color lighting (warm white and daylight). The results showed that environment with general lighting looked spacious and natural, worthless and lack of identity. When accent lighting was added, it looked unnatural and more serious. For the color temperature of warm white light could create the identity, it made the store look attractive and costly. But it looked traditional. And interior environments with color look narrow, unnatural, but it made the store look modern, costly, and more unique. Therefore, the color and light are elements in the environments that can display the image and identity of the store as well.

COLOR AND DESIGN - poster

CHROMOLAND. DESIGNING THE COLOR CULTURE

ZENNARO, Pietro

Dept. of Design and Planning in Complex Environments,
Università Iuav di Venezia

ABSTRACT

Chaos, turbulence and clouds seem to be aspects we must beware, except when they represent some of the fundamental assumptions of our contemporary life. All the rules previously in force appear to have been pulverized under pressure of the contemporary. The new territory that obeys these conditions require that all pure color (white or achromatic as in SANAA, Meyer, etc.) or form, geometric, as banal or simplistic, who prefer the purity, regularity, certainty of any rule must be ripped. The colors that belong to our contemporary landscape are ambivalent. They are cold, grey or blue-tinted, unfriendly and aloof. In a way they relate with the buildings glass covered and steel skins, representing the architectural design of the technological power (Gehry, Foster, Ned Kahn, etc.). One side of the contemporary seems to be aseptic, where the survival of natural organisms is very difficult. This is not the only message coming out from the contemporary world.

The technological landscape is definitely disguised under façade cladding that will do everything, heavily colored by day and night. The basic message coming out from these new landmarks is functional to not have time to think and allow a multitude of humanity to spend their existence within strict rules of which it is difficult to beware. This landscape of painted and color-lighted cities and metropolis stand as evidence of another way to design and use color, where the chromatic landscape, here named Chromoland, is reserving a very big emphasis to the contemporary cultural use of color and light (Herzog&DeMeuron, Sauerbruch&Hutton, Miralles&Tagliabue, etc). This way of color use is assumed by many ideologies to represent their ideals (i.e.g. publicity or the green design: they simulate the undertone colored part of the nature). The paper will synthesize some results carried out at the IUAV Colour&Light in Architecture research unit about this topic.

THE STUDY TO EXAMINE FACTORS INFLUENCING THE IMPRESSION OF COLOR HARMONY

WEI, Yuh-Chang¹; KUO, Wen-Guey²

¹ Department of Information Communications, Chinese Culture University, Taiwan

² Department of Textile Engineering, Chinese Culture University, Taiwan

ABSTRACT

Color harmony has been systematically investigated since 1956 at Budapest using specific pattern samples. Up to now, there are three known color harmony models proposed by Ou et al. (abbreviated as the Ou), Szabó et al. (as the Szabó) and Kuo (as the Kuo). To quantify the impression of color harmony, Ou et al. developed a CH formula for two color combinations. Szabó developed a CH formula for three color combinations and a harmony rendering index (HRI) quantifying the change of the value of CHF for certain test color sample combinations under the test light source. Kuo developed a CH formula via adding textile pattern samples, color images of fashion apparel with two and three color combinations, and using a psychophysical method of magnitude estimation instead of previous psychological method of category judgment. However, the above three models still cannot have good agreement with their predictions and visual test results of color harmony. The current findings indicated that factors influence the accuracy of color-harmony predicting models need to be further examined.

COLOR AND DESIGN - poster

A STUDY TO ENHANCE THE PREDICTABILITY OF A MODIFIED CIE COLOR DIFFERENCE FORMULA VIA POLYNOMIAL REGRESSION APPROACHES

WEI, Yuh-Chang¹; LO, Mei-Chun²

¹ Department of Information Communications, Chinese Culture University, Taiwan

² Department of Information Management, Shih Hsin University, Taiwan

ABSTRACT

A modification of color difference formula based on CIEDE2000 is developed. A residual weighting factor was acquired to enhance the predictability of CIE color difference formula effectively. The residuals, $\Delta E'$, were calculated between CIEDE2000 difference values, ΔE_{00} , and visual results, ΔV . The weighting function was derived by using three types of polynomial regression, including RE-common, RE-divisional and RE-multiple. The coefficients of polynomial equation were determined to predict the minimized residuals, $\Delta E_P'$. The modified color difference values, ΔE_{RE} , were obtained by calculating ΔE_{00} with $\Delta E_P'$. A combined experimented dataset (COM) was formed, which consisted of four reliable color-difference datasets. The equation was tested together with the other CIE color difference formulae using the combined dataset and each of blue, gray and dark datasets. The results showed that the modified formula performed better than CIEDE2000.

DELICIOUS-LOOKING COLOR OF MUG WITH GREEN TEA

OKUDA, Shino¹; OKAJIMA, Katsunori

¹ Faculty of Human Life and Science, Doshisha Women's College of Liberal Arts

² Faculty of Environment and Information Sciences, Yokohama National University

ABSTRACT

Recently, green tea has been popular around the world and has been adapted to a variety of styles. This study aims at revealing which color of mug with green tea looks delicious. A subjective experiment was conducted by modifying the mug color. We prepared 2 kinds of green tea, one was a bottled green tea (yellowish color) and the other was a decocted green tea (yellow-green color). The chromaticity values of ceramic mugs with green tea were measured using a 2D colorimeter under the standard illuminant D65. In the experiment, the original mug color was replaced with one of several target colors. Nine kinds of chromaticity values (red, red-yellow (orange), yellow, yellow-green, green, blue-green, blue and red-blue (purple) and a grey) were tested. The luminance values were kept intact. Twenty participants observed the modified images presented on a calibrated LCD monitor and evaluated "predicted sweetness", "predicted sourness", "predicted bitterness", "predicted roasted-flavor" and "predicted deliciousness" with a 7 step numerical scale. Subsequently, they evaluated the images using a semantic differential method with five pairs of adjectives. Subjects were all female and in their twenties. As a result, we found that the yellow-green mug could make both the bottled green tea and the decocted green tea visually delicious, and that the yellow and the red-yellow mug could make the bottled green tea delicious-looking. On the other hand, the blue-green and the red-blue mug decreased the predicted deliciousness of both the bottled green tea and the decocted green tea. In addition, it is shown that the yellow-green mug could give natural, classical and noble impressions and the red-blue mug gave artificial, modern and unique impressions. In conclusion, although delicious-looking colors of mug depend on tea color, yellow-green mugs can make any green tea visually delicious.

ARCHITECTURE - poster

COLOR CONTRAST, MODERNISM AND CULTURAL CHANGES: THE CASE OF THE “REVISTA DE LA CONSTRUCCIÓN” IN CHILE 1962-1972

CALVO Ivanovic, Ingrid Estefanía
Departamento de Diseño, Universidad de Chile

ABSTRACT

This research explores the use of color contrast as a fundamental resource in the graphic visualization of the cultural change towards an industrial economy and a modern society in Latin America. This can be recognized in the graphic elements of the “Revista de la Construcción” (Builders Magazine), which circulated in Chile between the years 1962 and 1972. This magazine was the official publication of the Cámara Chilena de la Construcción (Chilean Builders Association) and was inserted in the economic model of developmentalism, propelled by the ECLAC (The United Nations Economic Commission for Latin America and the Caribbean). The purpose of the model was the industrialization of the Latinamerican countries in order to replace the import of products. From its content, the magazine focused in the building industrialization, promoting a rational practice and considering the approaches of the modern movement in architecture, through the simplification and standardization of shapes. This focus was also manifested in the visual aspect of the magazine, in which is noticeable the influence of the european abstract-geometric vanguard shapes, and the use of the characteristic contrasted colors from the Bauhaus and the subsequent courses of Josef Albers in Yale (whose works were cited numerous times by the magazine designer), among others. This use of morphology sought to link the visual lenguaje of color with rational industrial processes. Color contrast was used with the intention to be the main character on the cover of the magazine (highlighting it over other Chilean contemporary publications) and in its interior, contrasted colors perform as the magazine guideline. They maximize the eye’s attraction towards the contents and recognition of shapes. The use of color counterpoints potentiated this magazine as a clear example of modern publications design from the twentieth century in Chile, what will be put into value through this paper.

GUIDE FOR MAINTAINING THE COLOR OF PLANTS ON A GREEN-WALL

SueRan CHOI¹, SangEun SHIN¹, JiHyeon SEO², YooSun KIM³

¹ Dept. of Environmental Horticulture, Sahmyook University

² Floriculture laboratory, dept. of Environmental Horticulture, University of Seoul

³ Dept. of Environmental Green Design, Sahmyook University

ABSTRACT

The environmentally friendly Eco Plaza building, which takes full advantage of natural energy, was constructed by Seoul City, in 2012 and was created to be a huge vertical indoor garden (Green-wall). The vertical garden was designed as a Green-wall to utilize the color of plants. The G-color of the plants was selected by considering brightness and saturation. Moreover, the Green-wall was designed to be able to produce different atmospheres based on the season of blooming and bearing fruits. In this study, the maintenance of 14 species containing 65,000 plants were analyzed. This study proposed a sustainable management plan to maintain the natural colors and growth of plants. Researchers performed a reproducible experiment using an Eco Plaza vertical garden (Green -wall) system (drip-watering, eco-planter), soil, and plants and then analyzed variations in the color of plants in accordance with temperature, humidity, and light. The growth environment of plants underwent many changes based on the color of the season. Accurate analysis of the color changes using the program was difficult. In the case of *Begonia rex*, *T. asiaticum* Nakai var. *variegatum* Hort., and *Hedera helix* L., growth during the humid summer induced many changes. While plant growth was poor, color changes in plants were numerous. In winter, the growth and colors of *Aglaonema* 'Silver Queen' and *Hypoestes phyllostachya* cv. changed. In addition, under the same temperature and humidity conditions, growth changes and differences in color could be observed depending on light intensity. This study attempted to maintain beautiful and sustainable colors despite color changes.

ARCHITECTURE - poster

COLOR AND CLADDING FOR A NEW RECLAMATION-ARCHITECTURE

GASPARINI, Katia
Politecnico di Milano

ABSTRACT

The approach to landscape's project can be included in the concept of valorization and requalification of the natural and built environment. This can be done through study, design and use of materials, processes and technical solutions related to color and its application. In this context, closely linked to the landscape's perception and its interaction with the user through the senses, the operations that can be planned for the development and qualification of environment and landscape of a particular area can take advantage of the knowledge of lighting and colorful materials. Inside the huge area of the design and landscape enhancement special interest is taken on valorization of the reclamation-systems area. In a recent research carried out at the IUAV University in cooperation with the Reclamation Consortiums of these territories needs to valorization and requalification of the reclamation systems have emerged. Among them are: hydraulic supports, pumping stations, water towers, etc. built after World War II. The reclamation systems made in this age are built without any design approach from the point of view of design and technology. Often these systems degrade the quality of the environment and landscape. The Directors of the Reclamation Consortiums asked to write the guidelines to improve the design of the reclamation architecture in order to valorize the surrounding landscape. This can be done with low environmental impact, where the priority is given to the appearance, visibility and perception of artifacts increasing the environmental quality. The paper will report the progress of research where the color will be addressed to the treatment of surfaces with innovative coatings. Above all, it will be dealt with the issue of valorization of landscapes with lighting and color technology by low environmental impact. This research takes into special attention concepts as: sustainability, reversibility, usability, security, visibility.

COLOUR IN THE MODERN INSTITUTIONAL ARCHITECTURE OF SAN JUAN, ARGENTINA. ITS RELATIONSHIP WITH THE TERRITORY AND CULTURE

LACIAR, Militza; NIETO, Alicia Beatriz; TORO, María Alejandra;
SOLERA, Esther; SENTAGNE, María Elvira - Asesora

School of Architecture, Urban Planning and Design of the National University of San Juan

ABSTRACT

This research work studies the colour of a selection of modern institutional buildings built up in the Civic axis of the city of San Juan, in the second half of the 20th Century, and analyses its relationship with the local culture and territory. The city of San Juan, which was largely destroyed by an earthquake in 1944, is reconstructed under the influence of urban and architectonic postulates of the Modern Movement. In it, a Civic axis, nonexistent in the foundation grid, was opened. This axis was planned with a monumental character and foreseen as headquarters of the main public buildings that had to show an image of power for the State. Its design was regulated by prescriptions that sealed the overall urban and architectonic configuration. Among other aspects, this regulation established in buildings the use of local and regional coating materials, whose colours and textures contributed to the image of this urban sector, declared in section estate of national historic interest in 2008. The climatic and geologic features of the territory, the design premises of the Modern Movement to which the outline of these buildings responds, the construction techniques and materials in use at that time in the local context, the image and meaning that the buildings had to transmit to the citizenship, together with the fulfilment of the building prescriptions in force, conformed a group of factors that influenced the shape and chromatic features of this particular architectonic heritage of the 20th Century. The study of colour in its three dimensions (hue, value and saturation) in each case, of the chromatic harmonies used and its criteria of application in relation to the factors announced, constitutes the contribution of this work developed in the School of Architecture of the National University of San Juan.

ARCHITECTURE - poster

PLEASE, NO MORE WHITE AT WORKPLACE ENVIRONMENTS

CARAMELO Gomes, Cristina¹; PRETO B., Sandra²

¹ Faculdade de Arquitectura e Artes. Universidade Lusíada de Lisboa, Portugal

² PhD student - Faculdade de Arquitectura. Universidade de Lisboa, Portugal

ABSTRACT

The colour design in workplace environments involves a multidisciplinary knowledge; however, the principle that supports its conception is repeatedly grounded on aesthetical considerations and colour preferences rather than physical and emotional effects.

Institutions' management is more concerned with the image of the organisation than with the ergonomics considerations, comfort and wellbeing. When the decision has to be made between cost control and an humanised workplace, the economics won and the user/employee, the most valuable asset of an organisation, is mistreated.

In nowadays, co-design and user centred design are significant principles to achieve more interested interior environments for human being and consequently to an efficient professional performance, thus more studies are required to understand and validate how colour influences the mood, wellbeing and motivation of employees. Colour should be used to relieve the so-called eyestrain as well as a parameter to encourage a positive emotional and physiological human effect.

The image of the organisation is very often associated with a high-tech one, and normally this is a synonymous of the use of the white, black and grey shades performing a monochromatic environment. However, the reflectance of those surfaces will result in a highly contrast ratio. The recommended reflectance for surfaces should be 3 to 1, so the colours of the furniture, walls, ceiling and floor should not be (just) white or black.

A careful control of light and colour will contribute for a comfortable interior environment, especially a workplace where the individual live for at least 8 hours per day. Human beings need sensorial diversity and colour is the first parameter perceived in any space that humans interact with.

Coworking spaces are emerging as a new model of workplaces. Coworking environments, due to their nature, require a deep understanding as they shelter people from different professional, cultural and social backgrounds with different gender and age issues. An architectural space should be a result of the understanding of different aspects and the colour is an important one and repeatedly forgotten.

This paper aims to study the "do's and don'ts" of a colour design in a workplace layout in a way that can be useful to a future humanised planning of coworking environments. To achieve such goals the research will be conducted throughout literature review from elected keywords and the analysis of two case studies: Lx CoWorking and Ávila CoWorking, in Lisbon, Portugal.

COLOURS FOR A SUSTAINABLE INNOVATION IN ARCHITECTURE: MATERIALS, TECHNOLOGIES, PRODUCTS

PREMIER, Alessandro
Iuav University of Venice, Italy

ABSTRACT

When we should consider the colour of a building a sustainable feature? In the contemporary architecture old and new materials, technologies and products are complying to the new rules of sustainability by providing the architectural project the means to adapt to the new challenges of contemporary innovation. Of course colour seems to play a strategic role in this scenario adapting to the choices of the different points of view, sometimes ideological, of contemporary architecture.

The paper wants to sum up the results of a recent research conducted among the "Eterotopie" Research Group by the author with the precious contribution of V. Brustolon, A. Dehò, C. Gregoris, A. Martini and P. Zennaro. The researchers, dealing with various specialisms, studied the use of colour of 12 families of materials, technologies and products with the aim to assess their real impact on the environment and the possible solutions based on a scientific and rational approach. The colours of architectural materials, technologies and products can change over time by aging and the surrounding environment is very important for choosing the color of a building. For this reason, a specific methodology of research aimed to analyze the entire life cycle of the colours of the architectural materials and products (LCA) has been chosen. The paper summarizes these specific contributions with the aim of providing a descriptive overview of the state of the art and the possible future evolutions.

ARCHITECTURE - poster

TENDENCIAS DEL DISEÑO CON COLOR PARA INTEGRAR ARQUITECTURAS EN LA CIUDAD: EL CENTRO HISTÓRICO DE VALENCIA

SERRA, Juan; TORRES, Ana; GARCÍA, Ángela; MORANT, César
Escuela Técnica Superior de Arquitectura Universidad Politécnica de Valencia

ABSTRACT

Este estudio forma parte de un proyecto de investigación para encontrar estrategias que mejoren la integración visual de arquitecturas con impacto en el paisaje basadas en criterios cromáticos. Para ello, se han tomado como casos de estudio una serie de edificios del centro histórico de Valencia que han sido señalados en la legislación urbanística por generar impacto visual. La finalidad es reducir su impacto estético y que sean bien valorados por la población.

Para ello se realizan un conjunto de fotomontajes con distintas propuestas de color que conforman una "base de estímulos" para ser evaluadas por observadores. No obstante, para desarrollar estas propuestas de color se debe elegir un "lenguaje plástico", es decir aquellos códigos visuales a emplear y que para el observador poseen connotaciones culturales significativas. Se trata de un aspecto que va más allá del estudio pormenorizado de los atributos del diseño (geometría, ritmos, contrastes y armonías de color, etc) y que responde más bien a la adscripción del conjunto de la composición a una determinada tendencia del diseño o movimiento artístico.

Para identificar dichas tendencias, seleccionamos ejemplos de arquitecturas relevantes por haber empleado el color como un elemento clave en su diálogo con el entorno, y analizamos su posible adscripción a un lenguaje plástico, así como las características compositivas que lo identifican. En base a las tendencias de diseño detectadas, se dispone de una amplia variedad de recursos expresivos, útiles para concretar posibilidades de intervención cromática en los edificios de Valencia.

Finalmente, el estudio con observadores permitirá conocer si existe afinidad entre las arquitecturas consideradas mejor integradas y el empleo de un determinado lenguaje artístico, o más bien la integración paisajística responde a aspectos mucho más genéricos tales como la similitud cromática entre figura y fondo.

THE INFLUENCE OF COLOR COMBINATIONS IN THAI AND JAPANESE RESTAURANTS

TANTANATEWIN, Warakul; INKAROJRIT, Vorapat
Faculty of Architecture, Chulalongkorn University, Bangkok

ABSTRACT

Currently, the restaurants are designed by using many techniques to attract customer like architectural elements, displays, furniture, color and lighting design to create an atmosphere. It continues to display the store image and nature of merchandise. "Color" is the essential role in influencing customers' entry decisions, the differences of color affects the perception of environmental characteristics and the different environment also influences buyers' behaviors. The purpose of this study is to explore how customers' perceptions of restaurant atmospheres interact with situational variables in their entry decisions. We conducted experimental study by focusing on the mood of customers which has been affected by color combinations, using the PAD-emotion model to measure emotional responses. There are three types of emotional characteristics; pleasure, arousal and dominance. The key variables that determine difference are culture (Thai and Japanese), color hue tone (warm and cool) and color saturation (low and high). The selected color combinations used is Pantone trendy color 2014. There are eight restaurant simulation scenes in the test (2 restaurant types x 2 color tones x 2 color saturations). The 66 Thai customers were asked to rate their feelings on 12 items. The semantic differential scale measures 3 dimensions of PAD-emotion, underlying factors are identified as "pleasant-unpleasant", "beautiful-ugly", "comfort-discomfort", "lively-depressible", "harmony-contrast", "aroused-unaroused", "spacious-confined", "relax-tense", "identity-common", "high class-low budget", "formal-casual" and "friendly-unfriendly". From the results, it can be explained that the hue tone and saturation can be affected on pleasure, arousal and dominance, furthermore, the different types of restaurant can also be affected on all emotional responses and influences on customers' entry decisions. The relation of perceptions and entry decisions depends on pleasure, arousal and splendidness; the high level of PAD-emotion is also affected the customers' consideration. More specially, the relationships between the different color-emotion and trends of entering the restaurant which are involved.

URBANISM - poster

7 COLORES DE UN CERRO EN LAS CASAS NATURALES

ARANCIO, Marta Irene
Universidad Nacional de Salta

ABSTRACT

En la localidad de **Purmamarca**, enclavada en la Provincia de Jujuy de la República Argentina, al norte de la ciudad de Jujuy y prácticamente sobre la Ruta Nacional N° 9, en la Quebrada de Humahuaca, se erige el Cerro de los 7 Colores.

El pueblo que lo contiene ya forma parte del reconocimiento que la UNESCO le proporcionó a estos sitios distinguiéndolo como Patrimonio Natural y Cultural de la Humanidad.

Este cerro es un punto singular que se destaca, contrastando con tantos otros que a pocos kilómetros alrededor no presentan la particularidad de este. Presentándose en cambio homogéneos en sus sienas, ocre, rojizos, pardos que igualmente particularizan el paisaje camino al andar.

Los óxidos de hierro en sus diferentes manifestaciones el de manganeso y otros proporcionan ante la luz del sol un desarrollo particular que en contraste con un límpido celeste, diáfano en extremo se recorta en postales, en tomas sucesivas para la sorpresa y encanto del observador.

Los colores que se distinguen especialmente son: morados, verdes, amarillos, violáceos, pardo rojizos, naranjas.

El atractivo que por años viene atrayendo desde simples turistas hasta cineastas, diseñadores, arquitectos, antropólogos, etc. tiene una particular manera de recordarse: los frasquitos de las tierras de los cerros. Sí, tierras "envasadas", un pedacito de paisaje aprisionado que no se escapa salvo que lo esparzamos.... Esta particular manera de llevarse una referencia del lugar visitado y admirado también permitirá revivir aquel impacto de color sorprendente.

Pero para el que se queda, para el que vive en Purmamarca la motivación omnipresente de los colores está en todas las manifestaciones visuales del lugar y se ven reflejadas en **los colores de las casas**, paredes en su mayoría que seleccionan uno de tantos tonos y los esparcen en planos sucesivos y contrapuestos, alternados por cactus, puertas y ventanas.

De la tierra surgen entonces las viviendas que en una sola vibración con el paisaje se habitan silenciosamente.

PULSE OF A STREET: AN URBAN STREETSCAPE BRANDING EXERCISE FOR BANGALORE

NIJOO, Dubey

Associate Faculty, Design for Retail Experience,
National Institute of Design, R&D Campus Bangalore, India

ABSTRACT

To capture an “emotional experience” of a physical space is at the heart of this paper. For a city to be a recognizable, the defining and distinctive characteristics that can be readily identified need be highlighted. These are functional as well as non-functional qualities. These include city appearance comprising of built structures, people, geography etc., and people’s experience of the city, and what kind of people inhabit the city.

The project aims to visually document and articulate (as form and colour) the iconic streets in Bangalore.

In a group of three the students were asked to select a street within Bangalore and make a visit to the place and capture the essence of the street with respect to all the five senses in collage.

Simultaneously pictures are taken during the visit. Having experienced a street the designer then penned down the experiences in a brainstorming session with teammates came up with keywords/phrases that aptly describe your experience in the street. Out of all the pictures were taken during your visit to the street 10-12 pictures were selected that are visual representations of that streetscape.

Out of each of the 10-12 pictures extracted were, dominant colours. The term “dominant colours” interpreted as amount of colour, which means a colour present in a situation in large quantities or in small in quantities, however the emotional impact of its presence is undeniable.

Carefully, by process of elimination selected were 8-10 colours describing the place. This would make the final colour palette, supported by keywords/phrases thought of during the brainstorming session.

The design solution were in the form of posters for each street. The format of the poster could be a landscape or portrait or a square format. The decision of format was chosen depending on the mood of the street.

The final artwork is a culmination of multiple sensations, and can be used as a street branding element with the urban landscape.

URBANISM - poster

WALLS THAT SPEAK: COLOUR AS AN URBAN NARRATIVE

GOMES Bezerra, Roselane Gomes
Universidade de Coimbra

ABSTRACT

Building a new image is a common desire that is shared by several cities. This fact is justified by the urban transformations resulting from the accelerated economic, industrial and technological globalization that the world has experienced since the end of the twentieth century. In this new configuration the urbe arises before the policymakers and planners filled with spaces in decay or degradation . Especially port areas, historic centers and old industrial instalations that had their uses modified or became, by different motives, ruins with few traces of that were. In the dynamics of imagetive metamorphosis that is emerging as a necessity of post-industrial urbe, it is common the implementation of several requalification projects that aim set up new urban spaces. In this context, the graffite is a challenge for the policymakers. Frenquently, the intervention projects use urban art as a form of modifying spaces of the city to attract visitors. From the analysis of the "Concurso de Graffites de Almada" (Contest of Graffites of Almada), I developed a reflection on how colour expressed in this urban art, is contributing to the construction of a new identity of the urban spaces. From a sociological point of view, the graffite reveals the social, cultural and political aspects of contemporary society. The purpose of my communication is to present an ethnographic gathering of graffites in the city of Almada and explain how the colour is becoming a narrative in the process of requalification of the urban spaces

COLOR CHANGES IN JAPANESE HISTORICAL HOUSING IN TAIPEI

Tien-Rein LEE, Wei-Lun KUO, Shin-Wen FANG
Chinese Culture University

ABSTRACT

Los acontecimientos históricos y las tradiciones culturales dan forma a la estructura y la apariencia de esferas de vida de las personas, ya que puede ser fácilmente entendido desde el diseño arquitectónico de una ciudad, y sus cambios a través del tiempo . Durante los 50 años de gobierno colonial japonés en Taiwan 1895 a 1945 , las comunidades japonesas se habían establecido en ciertas partes de la ciudad de Taipei , construido en su propia tradición cultural específica y el estilo. En el siguiente período de casi 70 años de modernización hasta hoy , Taipei ha visto grandes cambios en la arquitectura , y ha experimentado cambios de color hacia una mezcla de estilos, pero algunas de esas áreas de residencia todavía existen. Este estudio presenta una investigación sobre los factores de los cambios de color de la vivienda japonesa en el barrio de Yong- Kang , Qing -Tian , y las calles de Long - Quan ubicados en la parte sur del centro de la ciudad de Taipei , mediante la comparación de los estilos originales conservados e influencias añadidas del período de la industrialización. También se presentará un proyecto de color revitalización en curso se propone en la misma zona.

URBANISM - poster

CITY COLOR DEVELOPMENT STUDY CASE IN TAIPEI, 2014

LEE, Tien-Rein
Chinese Culture University

ABSTRACT

Algunas ciudades de todo el mundo han definido una identidad única basado en los colores que se han utilizado tradicionalmente en el estilo y los materiales arquitectónicos, que a menudo dependen de las condiciones geográficas y las influencias climáticas. Taipei como una ciudad relativamente joven, que crece rápidamente ha sido moldeada por la construcción moderna sin una planificación urbana más detallada, y de acuerdo a las condiciones climáticas locales, dando lugar a la utilización generalizada de las baldosas cerámicas, mármol, hormigón y productos industriales, lo que lleva a una falta de identidad colores - que forman, o un sistema de codificación por colores. Sin embargo, para aprehender e identificar los colores de Taipei, una encuesta ha sido llevada a cabo, la investigación de la situación actual en diferentes partes de la ciudad. Se han propuesto tres modelos principales de color: 1) Cinco Elementos - Teoría, 2) el orden de los colores del arco iris 3) Color System NCS. Sobre la base de una de estas teorías , una propuesta sobre la planificación del color determinará, colores reconocibles importantes para definir la identidad de color de Taipei, lo que a largo plazo pueden presentar la ciudad como un nombre de la tarjeta de la comunidad internacional. Este estudio también se presentarán los resultados de la encuesta y la propuesta sobre la planificación de color para la ciudad de Taipei .

PERCEPCIONES CROMÁTICAS DE LA CIUDAD DE TUNJA

RODRÍGUEZ Rodríguez, Carlos Mario
Joven Investigador, Grupo de investigación XISQUA
Universidad de Boyacá

ABSTRACT

La ponencia discute los resultado de la investigación *Colores de la ciudad imaginada*, cuyo objetivo fue desarrollar una lectura de la ciudad de Tunja Colombia a partir del estudio de los imaginarios urbanos del color presentes en la percepción de los tunjanos. Bajo la línea de investigación *Diseño del mensaje visual*, el proyecto se inscribe al grupo de investigación XISQUA del programa de Diseño Gráfico de la Universidad de Boyacá y hace parte del proyecto macro *Cultura y estética popular en Boyacá*. En esta presentación se exponen los resultados de la indagación del imaginario del color y el proceso metodológico planteado en el abordaje al ciudadano que se segmentó en tres niveles de acercamiento al objeto de estudio y empleó técnicas e instrumentos de investigación como realización de registros fotográficos, entrevistas, aplicación de cuestionarios y encuestas. El análisis de la información obtenida permitió establecer percepciones del color asociadas a lugares, eventos y características de Tunja, ello fue conjugado en la descripción del imaginario del color de la ciudad en el que se destacan categorías de percepción relacionadas al género, edad y grado de conocimiento de la ciudad; de la misma manera, los resultados permitieron el desarrollo de paletas de color de la ciudad, a partir del proceso de registro fotográfico y comparación del imaginario con la realidad. Esta investigación permitió concluir que el color es un elemento condicionante de la percepción visual del ambiente y hace parte de la producción de imaginarios urbanos y construcciones mentales de los habitantes y su estudio permite hacer una lectura de la ciudad, en la que se manifiestan las necesidades, anhelos, miedos y sentimientos de afecto de los habitantes por la ciudad.

URBANISM - poster

COLOR AND PLACE: NEW WAYS OF EXPRESSION IN THE CONTEMPORARY CITY

SUÁREZ, Darío

Institute of Color. Faculty of Architecture, Town Planning and Design
National University of Córdoba - Argentina

ABSTRACT

The clear trend towards the global city, a virtual city of flows, as the expression of the contemporary city makes us focus our attention on the Urban Place and its insertion in the present urban condition. The urban exteriors display new expressive and communicative functions of color that facilitate the promotion of pleasant experiences and contribute to the construction of urban places. Light, color and sound are sensory effects with the relevance of new ways of expressions established by present technologies (Bahamón 2010).

In the unique Latin-American context, and especially in the city of Córdoba, the intervention of color is essential. The iconic-linguistic potential of color, which has been enhanced by new production ways, boosts its capacity to communicate by creating atmospheres that go beyond materiality into new perceptive dimensions. This experience of the city and the resulting promotion of urban life are very important for the production of the urban place.

MAPEO CLIMÁTICO EN EL DESARROLLO DEL INSECTO QUE PRODUCE EL COLORANTE CARMÍN

VARGAS Rodríguez, Lorena; TORRES Anaya, Tomás; ARROYO Figueroa, Gabriela; HERRERA Méndez, Carlos Hernán; PÉREZ Nieto, Antonio
Departamento de Ingeniería Agroindustrial. División de Ciencias de la Salud e Ingenierías.
Campus Celaya-Salvatierra. Universidad de Guanajuato.

ABSTRACT

En la actualidad, la producción del insecto grana cochinilla en México, se encuentra en un proceso por rescatar, se han implementado diversos enfoques para ello. Un intento, es llevar la producción en naves de invernadero. Sin embargo, es necesario establecer estrategias para monitorear el clima dentro, debido a la vulnerabilidad del organismo vivo (*Dactylopius coccus* Costa) para soportar los cambios y presentar un desarrollo óptimo, para mejorar la producción. Así, una gran nave de invernadero, planificada en su diseño y materiales para la producción del insecto portador del colorante ácido carmínico, con capacidad de albergar a unas 350,000 pencas colgantes infestadas, se estableció en el estado de Guanajuato. A escasas 5 cosechas ocurridas bajo la naturalidad del clima interno del invernadero, se buscó incrementar la producción. Una estrategia para conseguirlo, es optimizar los parámetros climáticos de mayor impacto en el desarrollo del insecto (la temperatura, la humedad, la luminosidad y poco menos el viento). Por lo que el estudio en esta etapa implicó, la inspección de parámetros climáticos. Un resultado útil fue determinar la prevalencia de microclimas desconocidos en la nave, mismos que dieron origen a la construcción de un mapeo climático. Por último, para relacionar los parámetros climáticos con la producción del insecto, se comparó el peso y número de insectos por penca de nopal proveniente de lotes ubicados en microclimas significativamente diferentes. En conclusión, se espera que con estos resultados la empresa propietaria del sistema productivo, realice modificaciones estructurales en los espacios de microclimas más desfavorables en el mediano plazo; mientras tanto debe prever un nuevo esquema de trabajo en la distribución de lotes para los microclimas o en su defecto, nulificarlos.

TECHNOLOGY - poster

STUDY ON OPTIMAL COLOR TEMPERATURE OF AN OLED TV

Sungjin BANG, Yu Hoon KIM, Jang-Un KWON, Jang Jin YOO,
Moojong LIM, Jong Sang BAEK

Image Quality Development Department, LG Display Co., Ltd.

ABSTRACT

This paper aims to suggest a framework to find an optimal CCT (correlated color temperature) for an commercial OLED TV. As well known, preference is strongly dependent on CCT. Among more preferred CCTs, an optimal CCT which is similarly bright and less power-consuming CCT compared with each other was selected and suggested. This suggested optimal CCT was verified in terms of preference and power consumption.

Display's CCT is one of the important attributes for image quality assessment. In case of higher CCT, white color becomes more bluish, skin color turns pale and grass color changes unnatural. If the CCT is lower, however, sky color looks greener. For such reason, especially, image quality of skin, sky, grass and achromatic color are influenced by CCT. Thus, Optimal CCT for displays has been studied a lot. Schenkman and Kjeldahl recommended that a CCT of 5800K is preferred on a color monitor screen. Meanwhile Sproson suggested that the D65 white point is a good compromise for color television. Yoo also proposed a CCT of 6500K is most preferred at mobile display. Nevertheless, at the default mode of commercial TVs, CCTs range from 11,000K to 14,000K. There is distinct difference between research results and commercial TV's. So, in this paper, the relationship between image quality and CCT was studied in order to select optimal CCT for a commercial OLED TV. At the optimal CCT, power consumption of OLED TVs was also measured and discussed.

DEVELOPMENT OF 3D WATER SCREEN PROJECTION SYSTEM WITH HIGH IMAGE QUALITY

Chien-Yue CHEN, Shing-sheng GUAN,
Tsung-Jan CHANG, Pei-Jung WU

Department of Electronics Engineering, National Yunlin University of Science and Technology

ABSTRACT

With the advance of display technologies, the stereoscopic technique of flat panel displays is unable to satisfy people's requirements. In order to pursue more powerful visual experiences, display technologies are no longer confined to plane screens so that people try to develop different three-dimensional display technologies. A 3D water screen projection system, different from the general planar projection can provide high presence visual effect and wide view angle and generate multi-level three-dimensional effect when the field of view is changed. In this study, water mist is used as the projecting medium and two projectors with circular polarization are applied to presenting high resolution three-dimensional images. Using two projectors as the image output source, the output brightness is 500 cd/m^2 , the resolution is 720p (WXGA, 1280×800), and the image projection distance is 70cm. Furthermore, a ventilating system is equipped under the structure to improve the effects of air turbulence on water mist and remove the bright spots resulted from rear projection. The projection angle is set 20° , the nozzle air pressure 25 PSI, and the nozzle water pressure 5 PSI. The water screen is composed of 7.37×10^{10} particles sized 0.1mm, and the front fan angle of water screen is 105° , the side angle 21.93° , and the effective area 824 cm^2 . As mentioned above, a 3D image, with the disparity of image 4.5 cm and the depth 43 cm, can be obtained on the water screen. Furthermore, in order to show the color of three-dimensional images more realistically, the loss of illuminance, luminous, and luminous intensity when the light passes through the water screen as well as the image quality assessment of color rendering, color temperature, and contrast are analyzed. After the image quality assessment, the image is immediately corrected. Finally, this system can achieve more real and suitable 3D images for human eyes.

TECHNOLOGY - poster

COLOR PREFERENCES IN LUXURY ELECTRICAL APPLIANCES, OF THE MEXICAN POPULATION IN THE GUADALAJARA METROPOLITAN AREA (ZMG)

IBARRA G., Laura; ROSALES C., Rosa.; PRADO L., Lilia
Centro Universitario de Arte, Arquitectura y Diseño, Universidad de Guadalajara

ABSTRACT

The object's give sign's that transmit messages to all social, political, religious, economic, and cultural backgrounds among others (Sanchez, 2005). The meaning of these message's are received from the issuer's "object" to the recipient " person" who will use the "object", or the person who won't use the object but is still able to understand the messages transmitted by the "object" for the use of this information for encoding, decoding with the help of formal components that the object's consist of, like the material, form, texture, color, etc.

The main idea of this research is to determine which colors the population from ZMG relates to luxury electrical appliances. The color of choice can be a sign of cultural variable that can help to determine which color to apply in the design of products which will be directed towards a specific population.

The study is based in the (PPP) Perceptual Profile Personality of the Product (McDonagh, Bruseberg and Haslam 2002). Six electronic appliances were assessed (coffee maker, blender, refrigerator, stove, juice squeezer and microwave). The features of those products represent a social-economic level which is linked to the consumer of luxury objects.

The target of the survey was to determine the color's that represent the luxurious electronic appliance market which could be linked to a luxury car. The colors on the survey were (sand, silver, black, blue, grey, white, green and "other" which is outside of the list), the following color's were chosen for the luxury object's. The first three products were color silver and the next three products were black. The results show that colors silver and black are related with luxury and the remaining colors were less likely to be related with luxury appliances.

OPTICAL DESIGN OF SUNGLASS LENSES FOR ARCHERY COMPETITIONS USING CIECAM02

KATAYAMA, Ichiro¹; NODA Kenta²; KAWANISHI Noboru²

¹Faculty of Biology-Oriented Science and Technology, Kinki University, Japan

²Technology Development Department, Yamamoto Kogaku Co.,Ltd, Japan

ABSTRACT

In archery competitions, a concentrically painted target colored from the center outwards in yellow, red, cyan, black, and white is used. A high score is attained when the arrow hits the yellow area in the center. Therefore, even when players wear sunglasses, the discrimination of the colors of the target and the bright appearance of the color yellow are required.

In this study, the color discrimination evaluation index G_a of a sunglass lens was calculated as the ratio of A_r (the gamut area formed by the three colors of yellow, red and cyan on the CIECAM02 colorfulness plane under illuminant D65) and A_t (the gamut area formed by the three colors on the plane under D65 after passing through the lens). Next, the colorfulness M_r-Y and M_r-R under D65 and the colorfulness M_t-Y and M_t-R under D65 after passing through the lens were obtained for the yellow and red of the target, respectively. The ratios, M_t-Y/M_r-Y and M_t-R/M_r-R were then calculated. Next, the ratio $(M_t-Y/M_r-Y)/(M_t-R/M_r-R)$ was calculated and set as $\varepsilon M-Y/\varepsilon M-R$. The greater $\varepsilon M-Y/\varepsilon M-R$ becomes, the more distinctive the colorfulness of yellow against red will be through the sunglass lens.

A notch filter with a FWHM of 10nm was assumed, and G_a and $\varepsilon M-Y/\varepsilon M-R$ were calculated for the D65 which passed through it. When we changed the center wavelength of the notch filter from 380nm to 780nm, there was generally a trade-off between G_a and $\varepsilon M-Y/\varepsilon M-R$; however, when we blocked the wavelength in the vicinity of 505nm, it was found that it was possible to both improve color discrimination and emphasize colorfulness of yellow at the same time.

We produced a prototype lens that blocks in the vicinity of 505nm and conducted a visual evaluation experiment. After testing, 70% of observers responded that the colorfulness of yellow was more distinctive with the lens that blocks in the vicinity of 505nm.

TECHNOLOGY - poster

DIALOGUES BETWEEN BODY AND COLOR:

RIBEIRO, Susana Alexandra Marques
i2ADS - Research Institute in Art, Design and Society
Faculty of Fine Arts - University of Oporto

ABSTRACT

The article presents a study for the dialogues between self/body and the color during the creative practice of color painting, the process of defining color is embedded in self experience. The living body is, by consequence, the truly possibility of contact, not only with the world but whit ourselves – the truly possibility of reflection, thinking and knowledge. The intention of this study is to understand the energetic rhythms of body and color interaction and renew the knowledge of the sensitive world. At the light of this objective, will try to maintain a high standard of accuracy and theoretical science without, however, hide the passion, amazement and pleasure flowing from my involvement with the color. Using the methodology of *A/r/tography*, the places between body and color will be explored. Related to other forms of arts-based research, this methodology offers me the possibilities for engagement with, research and teaching (*a/r/t*).

THEORETICAL ANALYSIS OF ISHIHARA COLOR PLATES UNDER SPECIAL ILLUMINATION CONDITIONS

SAKAMOTO, Takashi ; TAMURA, Shigeharu
National Institute of Advanced Industrial Science and Technology (AIST)

ABSTRACT

The Ishihara test is the most widely used screening test for color vision defects. Tamura et al. found that some color combinations of LEDs improved numeral identification in the Ishihara test for deuteranopic observers, but the cause of this phenomenon was not theoretically analyzed. In this presentation, the authors report the results of theoretical analysis of the color plates used in the Ishihara test under three types of LED illumination and illuminant D65. The sRGB (specified in IEC 61966-2-1:1999) values of Ishihara plates were measured using a calibrated flatbed scanner, and they were translated to CIELAB values under illuminant D65. CIELAB values under three types of illumination, using white, red, and blue LEDs, were also calculated on the basis of the report by Sobagaki (1984). Deuteranopic vision was simulated by a chromatic vision simulator (Asada, 2011) that was developed using the Hunt–Pointer–Estévez cone fundamental space (Hunt, 1995) and a bent projection plane proposed by Brettel et al. (1997). The above-mentioned simulator was used to generate sRGB images of a deuteranopic observer's sight, and corresponding CIELAB values were calculated from those sRGB images. The CIELAB values of Ishihara plates were classified into two categories: figure colors and ground colors, and color differences and geometrical arrangements of these two categories were analyzed in CIELAB color space. The theoretical analysis results were as follows: clusters of figure colors and ground colors under illuminant D65 were not separated in CIELAB color space. Conversely, clusters of figure colors and ground colors under the three types of LED illumination were separated clearly in CIELAB color space. This may explain why illuminations (1), (2), and (3) yielded better distinction for deuteranopic observers.

AUTHOR INDEX

AGUILAR-TÉLLEZ, Dulce María 87
AGUIRRE, Fausto Enrique 66
AGUIRRE-VÉLEZ Carlos I. 16
AHUMADA, Daniela 23
AHLQVIST-JUHLIN, M. 98
ALVARADO Tapia, Ricardo 62
ÁLVARO, Leticia 77, 78
AMANI Tehran, Mohammad 17
AMICO, Veronica 38
ANSARI, Keivan 63
ARAGÓN Aquino, Fátima Karime 39, 40
ARANCIO, Marta Irene 159
ARCE-LOPERA, Carlos 73
ARROYO Figueroa, Gabriela 34, 133, 166
AVELLO, Lorena 23

BAEK, Jong Sang 167
BALIÁN, Marcelo 85
BANG, Sungjin 167
BANIANI, Mahshid 48
BARRIOS, Silvia 20
BATEZAT Duarte, Maria Lúcia 49
BIELER Antolín, Ana Isabel 30
BOJÓRQUEZ Martínez, Blanca Alicia 22
BOSSINI, Luca 39
BOZORGMEHR, Shirin 110
BRANCOLI, Maria Bernardita 23
BREÑA Sánchez, Matilde 129
BRUSTOLON, Veronica 100

CALLET, Patrick 60
CALVO Ivanovic, Ingrid Estefanía 151
CAMARENA Ortiz, Eréndira Dolores 120
CAMELO Gomes, Cristina 155
CARVALHO Santos, Paloma O. de 35
CARVALHO, Cristina 71
CERISE, Rémi 61
CÉSAR, J. 106

CHAGOYA Rodriguez, Maria Elena 55
CHANG, Tsung-Jan 168
CHE, Jiangning 97
CHEN, Chien-Yue 168
CHEN, Chun-Hung 28
CHEUNG, Vien 99
CHOI, SueRan 152
CLAES, Pieterjan 87
COHEN, Marcia 50
CORDERO-JAHR, Elisa 73
COX Irarrázaval, María de la Paz 71
CRISTOFORETTI, Giulia 39
CUVELIER, Mónica 66

DA POS, Osvaldo 39
DASHTI, Samaneh 93
DE LUCAS Tron, Alfonso 47
DELPUEYO Español, Xana 89
DIAS, Sarah Frances 121
DOMPER Rodríguez, María Rosa 67
Duarte, R.B. 106
DURÃO, Maria João 80, 91, 124, 144
DUYAN, Fazıla 74

ENRÍQUEZ Razo, María Dolores 34
ESPINOZA Colón, Jorge 122
ESPINOZA Silva, Clara Raquel 132
ESTÉVEZ, Silvia María 125

FANG, Shin-Wen 86, 162
FERNÁNDEZ-GUASTI, Manuel 134
FERNANDEZ-MALOIGNE, Christine 88
FIORENTIN, Pietro 39
FOROUGHMAND, Mostafa 41
FRAGOSO Susunaga, Olivia 27
FRANKLIN, Anna 77
FREULI, Francesca 39
FUENTES Lizama, Carolina A. 135
FURIÓ, Marc 89

GAMITO, Margarida 116
GARCÍA, A. 157

GARCÍA Izaguirre, Víctor Manuel 130
GARCÍA, Ángela 36, 95, 162
GASPARINI, Katia 156
GIRELLI, Inés 85
GOMES Bezerra, Roselane Gomes 161
GONG, Shi-Min 93, 140
GREGORIS, Chiara 123
GRIBER, Yulia 84
GUAN, Shing-Sheng 168
GUEVARA Fefer, Patricia 30
GUIDOLIN, Sara 39
GÜLER, Ceyda 75

HABIB, Susan 94
HAGENLOCHER, Esther 75
HAHM, Hyejeong 18
HENRÍQUEZ, Marlene 31
HERNÁNDEZ Hernández, Diego 134
HERRERA Méndez, Carlos Hernán 34, 133, 166
HIRAI, Keita 53
HOMLONG, Siri 24
HONG, Hyerim 18
HONG, Yumie 18
HORIUCHI, Takahiko 53, 92
HUAMAN Cóngora, Lucía 136

IBARRA G., Laura 79, 169
INCATASCIATO, Adriana 85
INKAROJRIT, VORAPAT 146, 158
IÑARRA, Susana 36, 97
IXTAINA, Pablo 58
IZADAN, Hossein 93

JARILD-KOBLANCK, Henriette 98
JOHSON, Jérôme 61
JUNG, Hyojin 54

KADAMANI Abiyoma, Samira 137
KATAYAMA, Ichiro 170
KAWANISHI, Noboru 170
KIM, Eliana 43
KIM, Hanna 56, 138

KIM, YooSun 152
KIM, Youngin 18
KIM, Yu Hoon 167
KING, Julie Anne 45
KITAGUCHI, Saori 54
KIWAMU, Maki 99
KLARÉN, Ulf 81
KO, Gyeol 18
KOMMONEN, Kirsi Riitta 111
KUO, Monica 28
KUO, Wei-Lun 86, 162
KUO, Wen-Guey 148
KWALLEK, Nancy 52
KWON, Jang-Un 167

LACIAR, Militza 154
LE GONIDEC, Nathalie 61
LEE, Eun Jung 139
LEE, HeeWon 56
LEE, Jinsook 56, 62, 138
LEE, Tien-Rein 28, 86, 108, 162, 163
LEE, Wen-Yuan 140
LEE-NIINIOJA, Hee Sook 105
LEVALLE, Alejandra Eugenia 11
LILLO, Julio 76, 77
LILLO, Llover Julio A. 15
LIM, Moojong 167
LIMA, António 37
LLINARES, M^a Carmen 36, 95
LO, Mei-Chun 149
LÓPEZ, Mabel Amanda 57
LOZANO Castro, Rebeca Isadora 130

MACDONALD, Lindsay 42
MAFFEI, Simone Thereza Alexandrino 91
MAHMOUDI Nahavandi, Alireza 17
MANABE, Yoshitsugu 83, 90
MARICONDE, María Marta 85
MARTINI, Anna 32
MASATO Sato, Marie Nio 145
MEDINA García, Emma Angélica 124
MELITA, Salvador Edmundo 107

MENDIBURU, Alejandro 59
MENEZES, Marizilda dos Santos 91
MINAMI, Hirofumi 86
MINEZAKI, Mami 83
MIWA, Ryotaro 90
MIZOKAMI, Yoko 59
MOHD Fairuz 41
MONROY Mendoza, Liliana Angélica 12
MORADIAN, Siamak 64
MORANT, César 157
MOREIRA, Humberto 77, 78
MORENO, Jaime 88
MORO, M. 98
MOUTINHO, Natacha Antão 149
MUNIVE Loza, Leila Susan 68
MUÑOZ Ocotero, Verónica 30
MURCIA Melo, Bayardo 51
MUSSO, Maria Luisa 69
MUYUY Ojeda, Yenny Alejandra 109
MYLONAS, Dimitris 43

NASCIMENTO, Sérgio M.C. 141
NIETO, Alicia Beatriz 154
NIEVES, Juan Luis 141
NIJOO, Dubey 160
NIRINO Larroquette, Gabriela 13
NISHIYAMA, Daisuke 54
NODA, Kenta 170
NOURY, Larissa 29

ODETTI, Jimena Vanina 96, 112
OISHI, Saeko 60
OKAJIMA, Katsunori 72, 147
OKUDA, Shino 150
OLIVEIRA Cesar, João Carlos de 26
OLSSON, Gertrud 46
OSUMI, Masayuki 19, 139

PAILLAMIL Antiqueo, Ana L. 135
PARK, Jiyoung 61
PÉREZ Nieto, Antonio 34, 166
PETERSON, Giles 113

PIEKAS, Mari Ines 65
PIER Castelló, María Luisa 1340
PIRES, Filipa Nogueira 142
PRADO León, Lilia R. 15, 78, 79, 169
PREMIER, Alessandro 156
PRETO B., Sandra 155
PUCCIO, Carmen 126
PUJOL Ramo, Jaume 89

QUIJANO DE RINCÓN, Amparo 137

RAMÍREZ Ramírez, Mauricio 33
RAMÍREZ Ramírez, Rodrigo 14, 33
RAMIS, Paloma 74
RANGEL Vázquez, Nallely 103, 136
RANGEL-CHÁVEZ, Isaac 87
RAO, Swati 104
RAVI, Sandhya 25
REYES González, Alberto 96
REYES González, Andrés Enrique 96
RIBEIRO, Susana Alexandra Marques 171
RIQUELME, Paulina 23
RIZZI, Alessandro 88
RODRÍGUEZ Rodríguez, Carlos Mario 164
ROMERO, Javier 141
ROSALES C., Rosa 78, 169
RUVALCABA-SIL, José Luis 87
RYU, Jiseon 56

SÁENZ Romero, Inda 82
SAKAMOTO, Takashi 127, 172
SAKURAI, Yusuke 73
SALAMINA, Concetta 39
SANTOS, Gabriela 70
SATO, Tetsuya 54
SCHIETTECATTE, Xavier 61
SCROCCARO, Alessandro 39
SENTAGNE, María Elvira 154
SEO, Eunji 62
SEO, JiHyeon 152
SERRA, Juan 36, 95, 157
SHIN, SangEun 152

Simões, Zelia 106
SOARES, Helena Teresa 64
SOLERA, Esther 154
SONG, Wenwen 100
SUÁREZ, Darío 85, 165
SUD, Shalini 107
SULLIVAN, Katherine 79
SUMARNI 41
SUN, Vincent 105
SUZUKI, Takuzi 83

TAKAHASHI, Shin'ya 131
TAMURA, Shigeharu 172
TANAKA, Midori 92
TANGKIJIWAT, Uravis 143
TANTANATEWIN, Warakul 146, 158
TARAJKO-KOWALSKA, Justyna 101
TOMINAGA, Shoji 53
TORO, María Alejandra 154
TORRES Anaya, Tomás 166
TORRES, Ana 36, 95, 157
TREJO Cuevas, Ericka 108

VACA, Inmaculada 31
VALENZUELA, Beatriz 74
VARGAS Rodríguez, Lorena 133, 166
VELOZ García, Rafael Alejandro 133
VILASECA Ricart, Meritxell 89

WEI, Yuh-Chang 148, 149
WU, Pei-Jung 168

YAGUCHI, Hirohisa 60
YAMAGUCHI, Mika 53
YAMAMOTO, Sari 49, 117
YATA, Noriko 83, 90
YOO, Jang Jin 167

ZAREI, Elika 96
ZENNARO, Pietro 147
ZHUANG, Yi 114
ZYBACZYNSKI, Veronica Maria 115

