

# 1

## Towards the Design of Hand-writing-based Chinese Topography

**Nobuo Takamori** (Lin, Hsin-Nan)\* and I-Ping Chen\*\*

Institute of Applied Art, National Chiao-Tung University, Taiwan

The current study is a part of our continuous research on incorporating hand-writing elements into the development of new Chinese topography. Our previous work includes the structural analysis and classification of Chinese characters (Yeh, Li & Chen, 1997), deriving the prototypical exemplar of hand-written characters (Chen & Chen, 2004), and the extraction of the skeleton of averaged hand-written characters (Chen & Chen, 2005). These studies focused on the structure and the global form of isolated hand-written characters. Unlike printed texts, however, in real writing the aspect ratio and the relative size of characters varies with context. To give the design of typography a touch of hand-writing flavor, such dynamics must be captured.

The purpose of this study is to find out the aspect ratios and relative sizes of Chinese characters in natural hand-writings. We would also like to evaluate the discrepancy between hand-writings and contemporary Chinese computer fonts. When doing Chinese font design, one of the most difficult issues is the sheer number of frequently used characters. To reduce the amount of work, we modified our previous classification system (Yeh, Li & Chen, 1997), and sort all possible characters into 10 different structural types. A special text comprising characters from all types and of wide range of stroke-counts was created as the standard copying material. Volunteers of various age or generations were asked to copy the standard text by hand. The hand-written copies were then digitized and subjected to topological analysis.

The results show that: (1) Aspect ratios of hand-written characters are structural-type-dependent. (2) Stroke-counts have some modulating effect on the relative size and aspect ratio of characters within the same category. In general, the characteristics of a given category would be exaggerated as the stroke-count increases. (3) The average aspect ratio of all characters is 9:11, which is not the same as the constant proportion of 1:1 used in contemporary Chinese computer fonts. The implications of our results to the design of typography will be discussed in the presentation.

### **Keywords**

Chinese characters, length and width's proportion, prototype, handwriting

# 2

## Interpreting Users' Mental Maps of Architecture

Donna Wheatley, PhD Candidate, Faculty of Architecture, Design and Planning  
The University of Sydney, Australia

There is a common expectation for architects to incorporate specific abstract values into architectural designs. In workplace design specifically, there is growing interest in the potential of visual aesthetics to attract and retain employees by communicating particular values. A research method that uses metaphor elicitation and network theory has been developed to create consensus mental maps of users' responses to the design of their workplace. This paper will demonstrate how the maps can be interpreted for practical design outcomes by comparing four maps.

In-depth interviews were conducted with employees at new corporate workplaces in Germany, Britain, China and Australia. A metaphor elicitation technique was used in which random sets of images are provided to interviewees to stimulate responses. The interview responses were interpreted as semantic networks in order to use social network analysis software to visualise and analyse the responses. Semantic network theory states that associations between words are a form of knowledge representation. They were first studied as a concept called associationist psychology (Locke and Hume) and later free association (Freud, Galton and Jung). Networks are a mathematical concept to capture and analyse interconnections between items. The architecture of networks can be analysed meaningfully and patterns discovered in non-visual data.

A key feature of the consensus mental maps in this study is that thoughts and feelings (shown as circles on the maps) can be traced to design elements of the workplace (squares). Each connection in the map refers to concepts that were also syntactically connected in the transcripts. Important nodes and clusters in the maps are identified using the software and compared across the four workplaces. Certain design elements are shown to consistently connect with similar thoughts and feelings such as large graphics with a creative environment, regular orthogonal shapes with a serious corporate climate, understated design as being stylish and classy. Careful comparison of the maps can have important practical design implications.

### **Keywords**

Architecture, semantic networks, metaphor elicitation, user perception of design

# 3

## **Interactive & Continuous Media Evaluation: A Comparison of Continuous and Summative Judgments of Video Sequences**

**Martin Schröer** and Holger Höge

University of Oldenburg, Institute of Psychology, Division Environment & Culture

When emotional features of an object are to be judged, mostly questionnaires are used. However, results based on such a method report only one judgement formed at the end of stimulus presentation (summative judgement). Hence, information about how this judgement was formed is lost. Interactive continuous measurement of aesthetic judgements, however, can provide data on the appraisal at any time during this process.

The newly developed software is somewhat similar to Schubert's Real Time Cognitive Response Recorder (RTCRR; Schubert, 2007) and Nagel's EMuJoy (Nagel et al, 2007), but focuses on video rather than music media. Additionally, it provides a video cassette recorder playback function that allows to inspect all appraisals of all participants at once (meta-playback). This feature is much more effective in detecting central tendencies or exceptional scores than looking at tables giving means and standard deviations.

Participants of the experiment were asked to rate a video clip (a) using a questionnaire and (b) by help of the new software, thus recording continuous data in two emotional dimensions simultaneously (arousal, valence). We focused on how different orders of presentation may influence summative judgements and if there is any relation between continuously recorded judgements and those delivered at the end of presentation.

While final results still have to be checked, (1) there seems to be some trend of intensified judgements in the continuous and final appraisals if the participants are asked to perform the continuous appraisal task immediately, i.e. without watching the whole video-clip before. However, there seem to be (2) greater discrepancies between continuous and summative judgements. (3) Although all participants rate the different scenes of the video clip differently their judgements show homogenous appraisals in the continuous judgement condition. (4) The corresponding summative judgements, however, are more heterogeneous.

This seems to confirm Zajonc's (1980) assumption, that the stimuli presented in a rating task are not solely accountable for the final appraisal made by participants. Some parts of the video stimuli (scenes) seem to have a stronger impact on the summative judgement than others; further research on this topic might focus the role of high-impact stimuli and non-stimulus influences.

### **Keywords**

Continuous measurement, aesthetic judgement, interactive evaluation, two dimensional space of emotion

# 4

## **THE SCREEN-AS SKIN THEORY: INVESTIGATING THE ROLE OF THE SPECTATOR'S BODY IN FILM PERCEPTION**

Isadora Olivé, PhD, Laboratoire de Physiologie de la Perception et de l'Action

Collège de France, Paris, France

In film theory, spectatorship conditions defined by the classical cinematographic apparatus are believed to be characterised by the principle of segregation of spaces, as proposed initially by Albert Michotte. According to it, the actual space of the film theatre projection room where the spectator is immersed does not confound itself with the filmic space projected on the screen. To these two segregated spaces would correspond two dissociated series of perceptual experiences, one, strictly audio-visual, corresponding to the perception of the film material itself, and the other, related to the experiencing of the actual co-presence of spectator and cinematographic apparatus, where only residual proprioceptive, bodily-related cues would manifest themselves. No mutual interplay would be observed between these two perceptual series. The most recent changing in paradigm in cognitive neurosciences, according to which "perception is a simulated act", pleads for an implication of the spectator's body in perception of the moving image, even if only at an implicit and partial level. The present work adapted experiments in behavioural studies in human beings demonstrating that the visual modality indeed do influence the central spatial representation of human body.

We developed a hybrid protocol stemming from both the rubber hand illusion (RHi), and induced out-of-body experiences (OBE). In RHi, subjects viewing the passive tactile stimulation of a rubber hand positioned in front of them in an anatomical plausible position, while feeling congruent stimulation of their own hand which is hidden from view, feel that the rubber hand is part of their own body, and that the localisation of the tactile stimulation is in the rubber hand rather than in their own hidden real hand.

In induced OBE, subjects localize their global bodily-self in the virtual visual representation of their bodies, under identical passive tactile stimulation of the back of their bodies. In our protocol, we substituted the passive tactile stimulation by an actively acquired haptic stimulation, that is, subjects pressed and released continuously a piston. We repeated the condition of multisensory conflict between the localisation of the actual proprioceptive feedback of the haptic action and the visual feedback of that haptic action, obtained through a head-mounted display. Moreover, we developed two experimental measures in order to evaluate if any equivalent spatial displacement of the localisation of the haptic feedback would be observed for both body-part, as obtained in RHi for passive tactile perception, and for global bodily-self, as obtained in induced OBE for passive tactile perception. Our results demonstrate an equivalent displacement of haptic feedback as the ones observed for passive tactile perception, away from the actual proprioceptive emplacement and towards the emplacement of the support of the visual representation. We estimate that we demonstrated that the spatial limits of human body schema are reconfigured during moving image viewing. This evidence pleads for a revision of the principle of segregation of spaces and the dissociation of the perceptual series. Such segregation will most probably be replaced by a principle of symbioses between both spaces, which scope have to be further investigated, but which perspectives allow forging a new concept taken into account such a change in paradigm proposed herein, the screen-as-skin, an interface screen redefining the limits of our embodied selves.

# 5

## A comparison of perceptual grouping thresholds between visual artists and non-artists

**Justin Ostrofsky**, Aaron Kozbelt and Daniel Kurylo , Department of Psychology  
The Graduate Center and Brooklyn College, CUNY.

Previous research on artists' drawing advantages has focused on visual perception, particularly higher-level processes (Cohen & Jones, 2008; Kozbelt, 2001). However, no research has addressed whether artists and non-artists differ in more basic perceptual processes. Here we investigated whether artists and non-artists differ in their ability to perceptually group visual displays by similar stimulus features, by determining average grouping thresholds for each group across several stimulus cues.

Twenty artists and 22 non-artists were shown grids of elements on a computer screen. Participants indicated whether grids were grouped predominantly vertically or horizontally. Four cue conditions were tested, each using a 20×20 grid of equally spaced elements. In the luminance condition, black and white squares were presented. In the color condition, green and red squares were presented. In the orientation condition, participants saw Gabor patches, each oriented either vertically or horizontally. Finally, in the motion condition, squares briefly moved in one of two 45° directions. In each condition, the array was organized vertically if the columns predominantly consisted of one of the two stimulus features, with the two features alternating across columns; horizontal organization was the same, alternating across rows.

Thresholds were determined by the Method of Limits, where stimulus organization changes across trials. A correct identification of the array's predominant orientation led to a decrease in organization; incorrect responses resulted in an increase in organization. Thresholds were based upon the mean of eight reversal points, which represent the limit at which the grid organization first became ambiguous.

Results indicated that artists and non-artists did not reliably differ in their perceptual grouping thresholds for the luminance, color, or orientation conditions. However, artists had reliably lower grouping by motion thresholds than non-artists,  $t(40) = 2.20$ ,  $p < .05$ . This suggests that training in realistic drawing leads to advantages in perceptual grouping mechanisms related to motion, but not related to static displays, a somewhat surprising result. Regardless, this work provides the first documentation that artists and non-artists differ in a low-level perceptual process, which is suggested to contribute to superior drawing accuracy performance in artists.

# 6

## AFFECTIVE AND COGNITIVE PROCESSES ACTIVATED BY AESTHETIC PICTURE

Sara Longo, First University of Rome ("La Sapienza")

### Antecedents, Purposes and Methods

As a Student of the PhD Course in Clinical Psychology at the First University of Rome, I am very interested in people, places, environments, works of art, in different contexts. The six pictures I am presenting here, with psychological remarks, were taken in Spain, in Rome and in Southern Italy. I used a Canon IXUS 400 digital camera, and a Canon IXUS 600 digital camera.

### List and Features of the Submitted Works

The six selected pictures can be listed as follows:

- 1) "Girl on the stairs". These columns and the stairs are architectural elements seen in Barcelona (Spain). This black and white image integrates the person with an environment that is sober, regular and a little mysterious (Sara Longo, 2009; 30x40 cm).
- 2) "Trulli". Some different and quite famous architectural elements are visible here: the tops of the so-called "Trulli" near Martina Franca, in the Puglia region (Southern Italy), where I was born and my family lives. They are rustic and picturesque cylindrical buildings with conical roofs (Sara Longo, 2008; 30x40 cm).
- 3) "The fisherman of Gallipoli". This tilted colour picture was taken during the night with artificial light. A fisherman is putting bait on his hooks. Two girls are watching and are asking him questions on his activity (Sara Longo, 2009; 30x40 cm).
- 4) "Polychrome night shots at Circus Maximus". These semi-transparent coloured spheres, illuminated from within, were seen at the Circus Maximus in Rome during the so-called "Notte Bianca" ("White Night") of 2006. As a whole, they make up a regular texture with a considerable perspective effect, such as the ones studied by Gibson (1950) (Sara Longo, 2006; 40x30cm).
- 5) "Allegory of Good and Evil". Each ward of the city of Valencia (Spain) sets up its own allegoric wood and papier mâché installations during the Las Fallas (The Failures) Festival (Sara Longo, 2007; 30x40cm).
- 6) "Bizarre figure in Valencia". A rather incongruous wrought iron sculpture, depicting a bizarre personage, that is housed in the Ciudad de las Artes y de las Ciencias (City of the Arts and Sciences), in Valencia (Spain). The perceptual incongruity is consonant with the reality of Arts and Sciences (Biasi, 2006) (Sara Longo, 2008; 40x30cm).

### Keywords:

Architecture, Completion, Environment, Incongruity, Light, Texture

# 7

## IMAGES OF MODERN BERLIN

Julia Sciuto, First University of Rome ("La Sapienza")

### Antecedents, Purposes and Methods

Before becoming a student of Communication Psychology at the First University of Rome, I had lived in Germany for eighteen years. That is why I feel Berlin as my second capital city. In 2009 I took a series of photographs there and have selected the six images presented here in Dresden for the IAEA 2010 Art Exhibition. I used a Canon Digital IXUS 100 IS camera.

### List and Features of the Submitted Works

The pictures I am presenting here, with psychological remarks, can be listed as follows:

- 1) "Chiaroscuro Effects in the Jewish Memorial Monument". This black and white picture was taken in Berlin and depicts elements of the famous Jewish Memorial Monument build in 2004 on a design by the architect Daniel Liebeskind. I avoided colours in order to underline the relatively sad tonality of the environment, according to its meaning. The main perceptual process proposed by this image is linear perspective, with a degrading of elements with observer distance (Gibson, 1950); there is also great relief due to the chiaroscuro effect which makes the image strongly three-dimensional, thereby assuring its relief (Julia Sciuto, 2009; 30x20 cm).
- 2) "Architectural Perspective". This is a colour picture but the grey is really due to the monument stones as a dominant tonality. Again, perspective is the main perceptual process in which the beholder is involved, together with a light positional incongruity (Julia Sciuto, 2009; 20x30 cm).
- 3) "The Iron Masks". In the Memory Void of the Jewish Museum (also by Daniel Liebeskind) there are thousands of iron plates cut into faces that evoke the many victims of the Holocaust (Julia Sciuto, 2009; 30x20 cm).
- 4) "The Dome of the Reichstag". This is an internal view, from below, of the Reichstag dome (by the architect Norman Foster, 1992). There is a considerable transparency effect (Metelli, 1974) and significant perspective and completion phenomena (Julia Sciuto, 2009; 30x20 cm).
- 5) "Light and Shadow Contrasts in Gendarmenmarkt". This picture was taken in the Gendarmenmarkt, a famous square in Berlin's City Center, where there are two churches called "Deutscher Dom" and "Franzoesicher Dom"; moreover, the "Konzerthaus" along with a monument showing a Lion surmounted by a Putto. There are some remarkable contrasts between the sunset light and shadow, the dome's warm colours standing out with the silhouette of the group of statues with back lighting (Julia Sciuto, 2009; 30x20 cm).
- 6) "Inside a Berlin Bar". The warm darkness of the closed environment of this Berlin bar is barely illuminated by some candles which allow us to barely see the moving or still human figures (Julia Sciuto, 2009; 30x20 cm).

### Keywords

Berlin, Colour, Completion, Meaning, Perspective, Picture

# 8

## PORTRAITS OF WOMEN AND URBAN INTERIORS

Maria Teresa Colucci, First University of Rome ("La Sapienza")

Antecedents, Purposes and Methods.

Last year I graduated in Psychology of Communication at Rome's "La Sapienza" University. This year I concluded my annual Photographic Course in Rome, at the "Scuola Romana di Fotografia" (SRF: Roman School of Photography). I have continued to take photographic pictures using a digital Canon EOS 30D Camera, as well a View Camera (with 10x12 cm negative film). I have prepared four portraits of women, with light pink as the dominant colour. To make these portraits, I used light cosmetic make up on the two young women taking part (eyeliner, lipstick, foundation cream and powder) as well as flesh-coloured hair covers (as used by actors). In this way, the portraits are both realistic and strongly expressive of femininity, even though they are rather particular in also looking like mannequins with something androgynous and thus ambiguous in them.

I have also added two pictures in black and white, rather contrasting with the previous ones in tonalities and content. They were taken inside a building in a Roman street and depict a staircase and the threshold of an apartment. A common feature with respect to the woman portraits is, nevertheless, the process of amodal completion (Michotte, Thinés, Crabbé, 1967).

I have also presented these works in other exhibitions such as "Artemics" or "New Unknown Artists", both in Rome last year.

List and Features of the Submitted Works.

The colour digital pictures and the technical and psychological remarks I am proposing for the IAEA Art Exhibition in Dresden, 2010, refer to the following six works :

- 1) "Interpretation of beauty" no. 1 (Maria Teresa Colucci, 50 x 35 cm)
- 2) "Interpretation of beauty" no. 2 (Maria Teresa Colucci, 50 x 35 cm)
- 3) "Interpretation of beauty" no. 3 (Maria Teresa Colucci, 50 x 35 cm)
- 4) "Interpretation of beauty" no. 4 (Maria Teresa Colucci, 50 x 35 cm)
- 5) Rome, Via Conte di Carmagnola, 32, no. 1 (Maria Teresa Colucci, 50 x 35 cm)
- 6) Rome, Via Conte di Carmagnola, 32, no. 2 (Maria Teresa Colucci, 50 x 35 cm)

### **Keywords**

Ambiguity, Androgyny, Femininity, Photography, Picture.

# 9

## The metaphorical construction of landscape inside visual arts

Javier García Benítez, Cultural Landscape Research Group,  
Architectural Projects Department, Faculty of Architecture, Polytechnic University of Madrid

The contemporary architectural and landscape take implicitly the construction of the desires and needs of the persons. Both are formed as the definition of a process that establishes a culturally response; that constitutes a precise relation between the interiority and the exteriority. As consequence, a zigzag movement and an intuitively process are necessary in the construction of the architectural fact. Across specific actions; the formalization of the concepts are identified by the processes of construction.

The intuitive process of construction of the architectural fact has an origin before the intellectual reasoning. In the beginnings of the Aesthetics, it is possible to establish that "before the reasons they were the myths ... and before the philosophers, the poets". From this point of view, the categories of the "beauty" appear as improper words (of ethical origin) that refer to the sensitive thing. The first approximation to these aesthetic categories is produced by means of an intuitive knowledge in which the aesthetic thing is identified by the ethical thing, that is to say, the "beauty" and the "good" are equivalent.

This intuitive knowledge produces a displacement between the meaning of the "beauty" and the "good". This action provides with metaphorical character to the experience of the knowledge of the categories of the beautiful thing and the good thing. That is to say, the first specific method by which the category of the beautiful thing is known arises from the metaphor. The metaphor is the describer of the knowledge of the experience.

This paper presents different artistic metaphors –from architecture, from visual-art, from land art, from... – that create an intentional cultural construction of the daily experience. This cultural construction is formed through different viewpoints of the authors –Cedric Price, Tarkovsky, Robert Smithson...-. We analyze the basic actions and the matter of each visual metaphor. We are pointing to... the construction of the process – the experience and the action- through metaphorical landscapes.

### Keywords

architecture, landscape, art, metaphor, action, intuition, knowledge

# 10

## Scientific models and creativity in the architectural design process

Nathalie Bredella, TU Berlin

Architecture can be described as a field where various forms of knowledge meet – being in a special position between the humanities, natural sciences and technology. Hence the question is how these different forms of knowledge are related to each other in the design process and how they influence the aesthetic experience of the architectural object.

Since the introduction of digital techniques issues of how new technology changes design are frequently discussed in relation to the adaptation of scientific models from mathematics, biology and neuroscience. The reference to these models has led to systematic design methods determined by forms of computation. Characteristic of these approaches is that insights from natural science are linked to forms of topological design through which, according to Greg Lynn a new alliance between space, geometry and body has been instigated. Yet what aspects of perception are stressed in the new spatial concepts, and how do they influence the aesthetic experience?

In the paper I will examine three different approaches by the architects Greg Lynn, Lars Spuybroek and Bernard Cache who refer to models of biology, neuroscience and mathematics in developing their design theory. I will focus on the specific aspects the architects draw from sciences and how they transform this knowledge during the creative process.

### **Keywords**

Aesthetic experience, science, creativity, design process

## Patterns of Change of Painting Styles in Artists with Dementia

**Benjamin van Buren**, Bianca Bromberger, Daniel Potts, Bruce Miller, Anjan Chatterjee  
University of Pennsylvania

A substantial body of literature supports the idea that systematic changes in painting styles can occur in artists' work following the onset of dementia. However, only few studies have attempted to quantify these changes. In this study, thirty artistically naïve participants rated paintings made by four artists with dementia. The paintings were produced by two artists with Alzheimer's disease (AD) and two artists with frontotemporal dementia (FTD). Paintings were selected from different points in time across the progression of these patients' disease. The participants were blind to the time-points in disease progression that the paintings were made. Participants rated the paintings on 6 formal characteristics (depth, color temperature, color saturation, balance, stroke, and simplicity) and 6 conceptual characteristics (depictive accuracy, abstractness, emotion, symbolism, realism, and animacy). We used the Assessment of Art Attributes (AAA) to first identify and eliminate individual raters that were insensitive to any specific attribute as determined by scoring more two standard deviations from the group mean for that attribute. Then, we determined if there were linear trends in changes over time in artists' post-morbid oeuvre for these attributes using Spearman correlations for each. For both AD patients, the paintings changed towards greater abstraction, use of symbolism, and declined in realism. The paintings were also flatter and more distorted ( $p < 0.05$ ). In contrast to the AD patients, we did not find systematic changes in attributes of paintings produced by the two FTD patients. These results suggest that artistic changes brought about by degenerative neurological disease can vary by diagnosis. The artistic changes produced by AD appear to evolve stereotypically as the disease progresses. By contrast changes in FTD paintings did not show linear or consistent trends over time. This lack of consistency may be the result of the more varied distribution of neuropathology in these patients and relative preservation of visual association cortices in these patients.

### Keywords

Aesthetics, Alzheimer's disease, Frontotemporal dementia, neuroaesthetics, dementia, neuropsychology

# 12

## The Narration of Hair: The Interested Aesthetic Practice

Chia-horng Hung, Department of Fine Art, National Taiwan Normal University

Hair styles narrated one of the historical perspectives of aesthetics across cultures. The wig was one of the prevailing signifiers for expression in France in the eighteenth century, which happened long after the ancient Greece and Rome when rulers displayed abundant and flowing locks in order to distinguish themselves. At the same time, the wide-spreading plaited hair was under the command of “Order of Hair Shaving” in China. It seems individuals nowadays are empowered to create their own hair styling as aesthetic practice, but is it true? Few researches have probed into this issue; to tackle it, a questionnaire was designed for a cohort of 77 participants, who were randomly sampled respectively in each of the three target communities (24 juveniles, 28 young adults, and 25 adults).

Combined operations as techniques of natural observation, document collection, literature review, and interview, were also employed for randomly selected 27 out of 77 participants in order for triangulation and cross validity. Results were revealed as the following. Firstly, there was inconsistency between responses to questionnaire by participants and their actual behaviors. Secondly, evidences uncovered discrepancies in how the participants, of different educational backgrounds, occupations, genders, socioeconomic backgrounds, regions, hair, races, regions, and even sexual orientations, interpreted and practiced their hair aesthetics. Finally, social and cultural significations were generally embedded in participants’ hair style and both consciously and unconsciously concerned how they practiced their hair aesthetics.

In a nutshell, methodologically speaking, questionnaire seems don’t always reflect the truth of actual practice. Moreover, my main finding does not parallel the concept of “disinterested aesthetics” by Kant. Further, hair’s centrality lies in personal aesthetic identity associating more with the external than with the internal factors. The aesthetic practice in hair styling, beyond personal meaning, connotes its fascinating role as communication. Individual constructs self identity and builds cultural imagination in their presentation of hair semiotics; culture and power, in the meanwhile, are shaping their bodies. There is an evident association between hair aesthetics and status, which sheds light on the aesthetic signification between self and other; in this case, any change of hair is of significant meanings.

### **Keywords**

Hair Style, Aesthetic Practice

## The design process as multiple and complex problem solving

Ulrike Englisch, Pierre Sachse, Johannes Uhlmann

General principles of constructive design actions – based on the qualitative analysis of established conceptions and experts' statements of technical and non-technical (artistic) design processes – lead to the assumption of a continuum of design processes. By this continuum with its technical and artistic pole the classification of individual design processes is made possible – disciplines may be characterized as rather technical or artistic ones or as so called "mixture disciplines" (Englisch, Sachse & Uhlmann 2008).

Particular interest is given to the "mixture discipline" Industrial Design. Because of the complexity of requests on the object to be designed (artistic and technical requests) and the diversity of problem fields (or sub-problems) the designer is confronted with individual design processes may be understood as multiple and complex problem solving processes (cf. Badke-Schaub 2007).

First the course of a design process will be presented – this theoretical course is derived from conceptions in design (e.g. Günther & Ehrlenspiel 2007, Lauche 2007), a discipline-specific conception "Vorgehensplanung Designprozess" Uhlmann 2005) and findings from psychological studies in engineering design (cf. Hacker 2002, Sachse 2001).

It is obviously that – in contrast to engineering design processes – the initial "key concept" (Dorst & Cross 2001), or the so called "Hypothetischer Gesamtentwurf" (Uhlmann 2005) is of high importance: This anticipation of the object makes an opportunistic and intuitive (Hayes-Roth & Hayes-Roth 1979) but at the same time systematic work (Hacker 2005) on the sub-problems possible. These sub-problems depend on each other and on the "general problem" – in addition they can be characterized as being rather artistic or technical. This differentiation is for example reflected in the way sub-problems are solved (calculations, sketches to technical demands vs. verbal descriptions of effects, comparative sketches to colours and forms etc.) or the criteria leading to breaking-off the work on a special subproblem.

Finally and with regard to the sub-problems' solutions an object is worked out – in virtual or material manner.

Using students' documentations (N=20) these theoretical assumptions can be reconstructed. By showing some pictures out of students' documentations an insight in individual design processes – especially in the work on artistic sub-problems – in Industrial Design will be given.

### Keywords

artistic design process, technical design process, complex problem solving

## The Relationship Between Mental Visualization Types And Drawing Habits

Shih-Ting Huang\* and I-Ping Chen\*\*,

Institute of Applied Art, National Chiao-Tung University, Taiwan

Drawing is a complex vision-guided motor skill that must involve a good variety of cognitive functions. Among all the supporting cognitive functions, the ones associated with creating and maintaining a stable internal representation should play a crucial role in drawing. In this research, we explore the correlations between types of drawing habits and cognitive styles pertaining to mental visualization. We classified painters according to their performance in drawing and Cognitive ability tests. One group of painters who are good at drawing realistically are called Type A drawers. By contrast, Type B drawers tend to make schematic drawings.

Cognitive styles refer to an individual's preference and inclinations for acquiring and processing information (Ausburn & Ausburn, 1978; Messick, 1984). Earlier researchers (Bartlett, 1932; Paivio, 1971; Richardson, 1977) proposed that individuals can be classified as visualizers versus verbalizer. According to this concept, visualizers prefer relying on imagery ability when attempting to perform cognitive tasks. Verbalizers prefer relying on verbal abilities. Recently, Kozhevnikov et al. (2005) reported that there are two different types of visualization groups: object visualizers who tend to construct images of the properties (such as color, texture, shape) of objects, and spatial visualizers who tend to manipulate schematic imagery to represent locations and spatial relations among objects and to perform complex spatial transformations.

The participants were pre-screened for their drawing skills and training history to ensure that they are good drawers. 206 participants in total were qualified for this study. A set of drawing tasks were used for classifying the participants into Type A or Type B drawers. All participants were also evaluated and classified according to their cognitive styles and mental imagery forming abilities with a standardized battery OSIQ(Object-Spatial Imagery Questionnaire, Blajenkova et. al. (2006)).

We found that drawers' representational drawing ability is correlated with mental visualization types. Object visualizers tend to use their object imagery ability to make realistic drawings. Spatial visualizers, however, tend to rely more on their spatial imagery ability to do so. In general, drawers' schematic drawing ability is inversely correlated with their spatial imagery ability, suggesting that drawers of inferior spatial imagery ability tend to simplify the spatial relationship of pictorial elements, and ,thus, turning their drawings towards schematic styles.

### Keywords:

mental imagery, drawing, cognitive style, visualizer, verbalizer, spatial imagery, object imagery

## **What Do Spectators of Theater Performances Experience? Investigating the Theatrical Event**

**Johanna Jobst**, Sabine Boerner, and Meike Wiemann

University of Konstanz, Germany

The study aims at explaining visitors' overall judgment of a theatrical event. A questionnaire was constructed including the four dimensions of the theatrical experience identified by Eversmann (2004): the perceptual, cognitive, emotional, and communicative dimension. The authors investigated 125 visitors of a production in a German community theater and confirmed both the emotional and cognitive dimensions as determinants of visitors' overall judgment of a theatrical event. Implications for further research on the theatrical experience are discussed.

Keywords:

## **When a body meets a body, and causes an aesthetic experience... or doesn't: The vital role of self/ other-awareness in art-perception, and an empirical study of their elimination**

**Matthew Pelowski** and Fuminori Akiba, Nagoya University, Japan

Acute self-focused attention, and awareness of others which may bring it about, is often thought of as a detriment to aesthetic experience, to the extent that most conceptions of aesthetic experience itself—from ultimate moments such as Bullough's "psychical distance," Maslow's "peak experience" and Csikszentmihaly's "flow," to selfless "disinterest" in basic aesthetic perception—stress its total elimination, while pedagogical design of museums often attempts to reduce the possibility for unwanted self/ other disruption. However, contrary to this, we have previously argued that other-induced self-awareness may actually play a vital role as a trigger for insight, schema-change and self-transformation, which in turn may lead to final pleasure, harmony and selfless aesthetic transcendence.

To explore this question, we consider empirical evidence from two arrangements of the Rothko Room in the Kawamura museum of Japan. In the first arrangement, in which the location of benches and unavoidable presence of a docent created a high incidence of self-awareness, we note an almost even split between a negative outcome, including lack of understanding and negative evaluation, in which self-awareness caused self-protective flight, and a highly positive outcome, in which self-awareness instead led to meta-cognitive reflection, epiphany, deepened understanding, positive hedonic assessment of worth and beauty, and transformation in viewer self-image. When this room was redesigned to reduce the possibility for self/ other-awareness, and therefore minimize the former outcome, while the resulting experience did eliminate anxiety and need for escape, and the artworks became significantly more "good," so too was lost the possibility for epiphany, intense pleasure, personal transformation and profound introspection.

This raises important questions for the relation between museum design, pedagogy and their desired outcomes, which, through the elimination of self-awareness, they may actively work against; and suggests the importance that contextual elements such as docent or bench location, when considered via the social ramifications underlying self-awareness, and when placed into the psychology of aesthetic experience, can have in determining the outcome of art viewing. It also raises an intriguing ethical and design conundrum when considering human interaction in the museum—between individual accord for all, or disruption for many and epiphany for a few.

### **Keywords**

self-awareness, other-awareness, social anxiety, aesthetic experience, museum design, epiphany, emotion and appraisal

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## Towards new Gesamtkunstwerke

Matteo Stagnoli

This paper analyze the impact of the new museums architecture in urban landscapes. It will show, in the context of my phd research about the architectures for contemporary art, the increasing importance of new museums' design and architectures in the landscape definition, especially in the european context from last seventies until today. Could we still call museums these new buildings? Are always these new spaces really useful to show masterpieces of contemporary art? How much important is the architectural container? Does is exist a competition between architects and artists? We will try to answer and to debate about these questions. We will present a field observation in some new museums built in the last thirty years; our analysis will be sociological for the publics, architectural for the buildings, aesthetic for the art and a semiotics analysis of the building's re-writing of urban european landscape. The aim is to show how contemporary architecture contribue to define museum as a new cultural phenomenon, a global architectural and design masterpiece.

### Keywords

Contemporary - Architecture – Art – Design – Museums – Sociology – Semiotics – Landscape

## The Phenomenology of Aesthetics and Design: Architecture Under the Epoche

By Craig Titus, M.A.

If we focus on the areas of intersection between the fields of Aesthetics and Design, we cannot help but notice another field, namely ethics, implicit in this intersection. Architecture, in particular, presents its viewers with certain questions—beyond how we could design structures—about we should design structures. And whether we should advocate designs centered on form or designs centered on function (or something in between) depends on certain pragmatic constraints (i.e. budgets, zoning, utility, desire etc.) but also, in a larger sense, very much on how people experience that design.

My argument in this paper is that a deep understanding of how both viewers and users experience architecture is fundamental to an ethical method of designing. I argue in favor of Edmund Husserl's advocacy of the epoche as a method, both of understanding how others experience their experiences of architecture and how designers might go about their work in an ethically justifiable way, while still concerning themselves with aesthetic and functional appeal. Husserl's method is important if we are to answer this question of how we should design. Perhaps at no other time are we so self-consciously or deliberately engaged in the act of experiencing as when we have an aesthetic experience. At no other time do we so specifically intend to be conscious of something, rather than simply conscious, and so it makes sense to eliminate, to bracket, all but the pure phenomena of the object under consideration. This paper develops the importance of the epoche in understanding what it means to experience architecture, using specific examples of architectural design to make the point. My conclusion is that a deeper understanding of this experience of architecture—both its aesthetic function and its functional utility—will likely help designers answer our question: how should we design?

### **Keywords:**

Phenomenology, Aesthetics, Husserl, Epoche, Architecture, Design

## Typeface Design Aesthetics and the Human Visual System

Karin von Ompteda

This paper examines typeface design aesthetics in the context of visual psychophysics research. Historically, there has been a disconnect between designerly and scientific approaches to typography. Designers have long questioned the superiority of scientific investigation over tacit craft experience, visual sensibility and professional knowledge. Scientists on the other hand have considered design a creative work, representing aesthetic and subjective judgments, typically not amenable to quantitative stimulus description. The result of this disconnect is a surprising paucity of research on the effects of typeface properties on reading over the past 40 years. My research attempts to mitigate this uneasy relationship through an analysis of the congruence between typographic design practice and vision science research. While there is evidence of the ability of typographers to design in accordance with the human visual system, this has evaded rigorous examination and dissemination.

This interdisciplinary study of typography is executed through ‘information visualization,’ a powerful method for the analysis and communication of complex data. By taking a quantitative approach to typeface morphological analysis, design practice can be visually mapped onto the results of scientific experiments. The outcome is a set of graphic visualizations illustrating the congruence (and incongruence) between celebrated typefaces and the human visual system. Of note, these would be amenable to the IAEA art exhibition.

One visualization explores the explicit goal of typeface designers to create an aesthetically pleasing pattern of alternating dark strokes and white ‘counters.’ What designers refer to as ‘rhythm,’ vision scientists quantify as ‘spatial frequency;’ the rate of alternation between black and white per unit distance (e.g. cycles per degree of visual angle). The visualization illustrates how designerly aesthetic judgement results in typefaces which largely fall within the spatial frequency range where the human visual system is most sensitive to contrast.

Addressing the conference theme of AESTHETICS + DESIGN, my paper will discuss the results of the visualizations. I bring to this discussion a background in both the sciences (MSc) and the arts (PhD Candidate). My doctoral research is funded by the Social Sciences and Humanities Research Council of Canada and a United Kingdom Commonwealth Scholarship.

### Keywords

Typography, Design Research, Visualization, Interdisciplinary, Visual Psychophysics

## Dynamic Evaluation of High- and Low-Creativity Drawings by Artist and Non-Artist Raters: Replication and Methodological Extension

Joanna Serafin, Aaron Kozbelt, Angelika Seidel, Melissa Dolese

**Abstract:** Throughout the process of creation, artists monitor their progress in solving “ill-defined” problems by applying various quality criteria. This process of dynamic evaluation can be empirically studied by obtaining quality trajectories of emerging artworks. Three experiments examined the differences in aesthetic judgment criteria and dynamic evaluation of high- versus low-creativity drawings.

In Experiment 1, raters were 26 professional artists, who rated the quality of 236 in-progress states of 20 artistic drawings (10 rated high- and 10 low-creativity as judged by another sample of artists). Images were presented sequentially which was a methodological modification of the previous dynamic evaluation study (Kozbelt & Serafin, 2009) where images were presented in a random order. In Experiment 2, the stimuli and procedure were the same as in Experiment 1. Raters in Experiment 2 and 3 were non-artist Brooklyn College undergraduates. In Experiment 3 the stimuli were 213 digital images chosen by another sample of non-artists.

The analyses evaluated of aesthetic judgment criteria in all three Experiments revealed that artists and non-artists use different aesthetic judgment criteria; artists valued originality, while non-artists valued realism. The crucial analysis using hierarchical linear modeling, looked at quality ratings over time and examined differences in the regression functions between high- versus low-creativity drawings. In Experiment 1, a median split divided the sample into two groups (valuing abstraction versus realism). For both groups, there was a strong positive overall effect of time on quality (all  $p < .001$ ). When outcome (high- versus low-creativity) was added as a drawing-level predictor, high-creativity sessions showed a less linear relation between time and quality, than did low-creativity sessions. In the abstract valuing subgroup, the difference in slope for the time term was marginally reliable,  $b = -0.166$ ,  $t = -2.042$ ,  $p = 0.056$  and in the sub-group valuing realism it was reliable,  $b = -0.307$ ,  $t = -3.963$ ,  $p < .05$ . In Experiment 2, the slope difference was also reliable,  $p < .05$ . However, the results in Experiment 3 were different – namely, no reliable difference in slopes between the high- and low-rated groups. Thus, even with a different method of image presentation (sequential, as opposed to random) the results indicate that only artists’ choices point to meaningful aspects about the process of creation.

### **Keywords:**

visual art, creativity, evaluation, problem solving, feeling of warmth

## Psychological Aesthetics and Expressive Signs in French Nineteenth-Century Ornament

Ralph Ghoche

Aesthetic philosophy and psycho-physical theories of the reception of form entered the domain of architecture largely through discussions on ornament and surface decoration. The freedom inherent in the production of ornament, its secondary or subsidiary status, raised with particular acuity the question of the nature of art and the source of its shaping power. Drawing from the burgeoning field of psychological aesthetics, mid-nineteenth-century ornamentalists were at the forefront of the drive to transform the panoply of real-life forms into an abstract language of lines and colours that could preserve and intensify their perceptual apprehension and significance. To this end, the works of philosophical luminaries such as Victor Cousin, Théodore Jouffroy, Félicité Lamennais and Charles Lévêque were pivotal in France and provided an ontological ground for such abstractive processes to occur. One charts a clear tendency in both the field of the aesthetician and that of the ornamentalist towards a quasi-scientific semiotics of form in which individual sign-elements act as psychological triggers eliciting determined responses in the viewer. The central assertion made by the following generation of art nouveau and jugendstil architects and by many early proponents of the modern movement in Europe; that forms and lines have a direct and productive effect on the emotional states of the beholder, stems directly from this earlier period of inquiry.

I propose therefore to return to this early episode in the long history of collaboration between the fields of architecture and aesthetics for the forthcoming Aesthetics + Design conference in Dresden. My paper will explore the work of two mid-nineteenth-century French architects whose contributions were specifically geared at reforming ornamental expression: Victor Ruprich-Robert (1820-1887) and Jules Bourgoïn (1838-1907). I will examine the ways in which these architects took up the very difficult task of translating the aesthetic theories of their time into working methods for the design and composition of ornamental forms and motifs and illustrate my presentation with the drawings and diagrams from their ornamental guide books. Finally, I intend to conclude by submitting that the abstractive processes at work in these ornamental guide books reveal a rich set of assumptions motivating early modern architecture as a whole.

### **Keywords:**

Architecture, Aesthetics, Ornament, France, Nineteenth-Century

**Markus Reisinger**

University of Technology Delft, Philips Research Europe, The Netherlands

## **In need of creating aesthetic luminous environments**

For a long period, people have decorated the environment in which they live. As we look around, obviously there is still a need evident that human living environments must provide more than a shelter function. In this article we look at light and lighting from a designer and a scientist's view to render the potential of lighting to enhance the quality of living in the built environment. Historically, the architects took care to shape and modify the natural light that enters interior space. In the early days of electric lighting, light was difficult to produce and control. Therefore, use of light focused on utilitarian aspects to provide light to see in the dark. Today's technologies provide light sources, optics, controls and levels of integration in buildings that enable designer to come up with a large variety of efficient lighting solutions. Restrictions to focus on functional requirements are overcome and today differentiation bases on aesthetic values instead.

Light impacts humans in multifaceted manner. The approach of designers is by nature a very holistic one that shows a specific fit to this challenge. Driven by intuition designer manage to combine multiple influences to create, in their eyes, suitable solutions. They work with their entire personality. The repertoire of processes and motivations to decide on a specific design are complex to trace. Gestalt effects demonstrate probably best examples of interactions as applied and extensively used in design. Lighting parallels architecture in many aspects. As a discipline that provides purposeful functions and at the same time as Pallasmaa expressed it as "a spatial and material metaphor of human existence". To be specific, light is an immaterial constituent of space. Aesthetics considerations for the luminous environment have a crucial influence on the quality of visual experiences that occupants face in a space. We argue; therefore that designer contributions are essential in a discipline that is today strongly populated by technical specifiers and planners. Therefore, the joint forces of science contributing by means of understanding effects of light on humans and of art which can put contradictory opposites to harmony, can define an invigorated role of light to benefit humans in the built environment.

**Keywords:** Environmental aesthetics; Human environment; Lighting; Interior design

**Pablo P.L. Tinio, Helmut Leder, and Marlies Strasser**

University of Vienna, Department of Psychology, Institute for Psychological Basic Research, Vienna, Austria

## **Image Quality and the Aesthetic Judgement of Photographs**

Although photographs dominate our visual lives, little is known about the influence of image quality on how photographs are perceived and experienced aesthetically. We report on research that systematically examined the individual and combined influence of various elements of image quality on the aesthetic judgment of photographs. We showed that some degradations or their combinations were more influential than others; that the effects depended on the image class to which an image belonged; and that the more degradations to which an image was subjected, the less it was liked, which is evidence that the effects of degradations are additive. Finally, we found evidence of a contrast effect in which the aesthetic judgments of high quality images were more positive as the images they were presented with were more degraded. These results are discussed in the context of current issues in general perception, empirical aesthetics, and photographic theory.

**Keywords:** aesthetics, image quality, image manipulation, contrast, sharpness, grain, photography