

## Chapter 1 : CiteSeerX " Citation Query Psychology and visual aesthetics

*The psychology of art and aesthetics is the study of the perception and experience of the visual arts, music, film, performances, literature, design, and the environment. Art is a human phenomenon, and therefore aesthetics is fundamentally a psychological process.*

We discuss the importance of visual aesthetics in the context of interactive systems and products, present how it has been studied in the field of Human-Computer Interaction HCI , and suggest directions for future work in this field. Two decades later, in the early s, this thought has conquered a solid place in both academia and industry. Since then, a steady stream of studies has explored various aspects of this area. The timeline of this research has roughly corresponded to even more dramatic developments in the information technology industry. Additionally, broader societal processes emphasizing design and style emerged at about the same time Gibney and Luscombe, ; Postrel, , further reinforcing shifts towards aesthetics of products in general Bloch, and specifically of interactive systems. A more detailed account of this process is provided in Tractinsky and Tractinsky In addition, a few other characteristics that describe research in the field can be listed. These characteristics describe how researchers in the field approach their subject matter. First, the approach of researchers in visual aesthetics reveals a bias towards positive effects of visual design , an issue to which I will return later in this chapter. Hence, research in this area commonly studies the beautiful and pleasing appearance of artifacts, or designed objects that are based on computing technology, rather than the effects of their ugly and displeasing counterparts. Third, while the Dagstuhl workshop mentioned above failed to reach a consensus over the time frame that appears relevant to visual aesthetic reactions, my own position is that it can encompass the entire range from very quick, visceral reactions to very long, contemplative evaluations. Fourth, the processes involved in designing and evaluating visual aesthetics are both affective and cognitive. Finally, research in the field of visual aesthetics is primarily empirical and is characteristically descriptive i. This important distinction stresses its roots in applied research and differentiates the field from artistic or philosophical writing on the subject. The objective of this chapter is to survey the field of visual aesthetics in HCI. We start by delineating the importance of visual aesthetics to HCI from three perspectives. We then present a research framework that serves us in reviewing key findings in the field. We also discuss methodological aspects and challenges for further research. Here I present three such perspectives - the design perspective, the psychological perspective, and the practical perspective. Although these perspectives are not meant to be exhaustive, I believe that, taken together they cover the lion share of arguments for the inclusion of visual aesthetics as a major aspect of HCI practice, research and education Tractinsky and Hassenzahl, While these are distinctive perspectives, they may overlap at certain points. Finally, to some it may seem somewhat redundant to submit these arguments, as they have gained considerable acceptance in the HCI community in recent years. Still, I believe that it is important to present them in an organized fashion to clarify my point of view and to provide people in the community a set of arguments that can be used to make a case for visual aesthetics before other audiences e. The mutual relevance of HCI and Design has long been recognized e. Here, I would like to point out two such implications. The first implication is the recognition that aesthetics constitutes an important and integral part of any design discipline. The importance of aesthetics increases as the interface between the artifact and the affected people e. The second implication is that visual aesthetics is often related to other design aspects. Thus, not only should we not worry about trading off aesthetic and other qualities of interactive systems; we should embrace aesthetics as a dimension that augments other aspects of the design and the overall interactive experience. It is not surprising that architecture was the subject of his elaborated writings, being the most salient and complex design discipline, which has affected human life ubiquitously. In addition to the fact that information technology and interactive systems have now become just as ubiquitous, it is not difficult to see that there is much in common for architecture and information technology e. In architecture, the Vitruvian principles have been influential since their rediscovery in the 15th century Johnson, ; Kruff, It is straightforward for the various computing and IT disciplines to recognize firmitas as the core principle of their research and practice. The need for robust,

reliable and dependable software, hardware, systems and products has occupied the field since its inception. We might say that, just as *firmitas* serves as a prerequisite for designing structure, so do we consider it a precondition for any IT system or product. Whereas there is little disagreement about the importance of *firmitas* principle, the computing community was originally much less enthused about the *utilitas* principle. In the context of IT, this principle deals with designing to meet individual and organizational needs and goals, with emphasis on the efficiency and the effectiveness of the interaction between people and artifacts. In fact, the HCI community can take much of the credit for incorporating the *utilitas* principle into mainstream practices in the computing industry cf. The field of HCI has its roots in attempts to study and design systems and product that will allow people to use them efficiently Card et al, The notion of usability, for example, which has served as a centerpiece of the HCI community has permeated not only other parts of the IT industry, but have gained almost universal recognition and support for the values of human-centered design. With *firmitas* and *utilitas* in place, the computing community in general, and the area of HCI in particular, are still missing a key Vitruvian principle. For years, beauty and delight were considered by the HCI community as *gratuitas*, often to be avoided. The emergence of beautiful interactive products during the first decade of the 21st century, which led to commercial success and to academic research e. Courtesy of Mark Pellegrini. Copyright terms and licence: The Vitruvian Man drawing was created by Leonardo da Vinci circa based on the work of Vitruvius. By empirically measuring and calculating the proportions of the human body, Vitruvius may also be considered the first student of ergonomics. Their warnings seem to reflect a concern about the ability of these two design aspects to coexist. Beauty was a hurdle on the road to good design. If designers emphasize aesthetics they by default sacrifice usability. This viewpoint has been changing gradually, thanks in part to a stream of research findings that suggest that at least in terms of perceived design attributes, aesthetics and usability can be viewed as positively correlated Tractinsky et al. Moreover, a closer look at usability guidelines suggests that there is no inherent conflict between usability and aesthetic principles. Guidelines for usable computer applications rely heavily on Gestalt laws of perception in recommending, for example, orderly displays, keeping elements aligned, grouping elements that belong together, clearly separating them from other elements, etc. Of course, these principles were applied as well to explain and promote the theory and practice of art and design, suggesting that they affect aesthetic impressions Arnheim, One of my favorite demonstrations of this point is the following screens which appeared in a study by Parush et al Participants in that study were asked to evaluate an interface quality of two screens Figure 3. The participants rated the quality of the left screen as better than the quality of the right screen. But which design quality were they referring to? Time and again, when I pose this question during class or in invited lectures, the distribution of answers remain almost the same: See section "Exceptions" in the copyright terms below. Two screens from Parush et al The left screen represents good design. The right screen represents bad design. This example illustrates the findings of another study Lavie and Tractinsky, in which web pages were characterized along two perceived dimensions. This subdimension was highly correlated with usability. Not surprisingly, perceived website usability was highly correlated with classical aesthetics but only moderately with expressive aesthetics. Thus, it is important to realize that a people can distinguish among different aesthetic aspects of interactive systems, and that b at least some aspects enhance, rather than negate, usability. Aesthetics was considered gratuitous at best or even harmful e. However, as interactive technology became so ingrained in everyday life, touching on almost all aspects of it, it became apparent that this position should be reevaluated Norman, , Hassenzahl, This sentiment was enthusiastically embraced in the field of HCI in the context of studying the user experience Hassenzahl and Tractinsky, ; Law and Schaik, This section provides three arguments, from a psychological perspective, for the importance of aesthetic design. The basic idea is that aesthetic design positively influences both emotional and cognitive processes Norman, ; Leder et al. In this chapter we first discuss the emotional and motivational aspects: We then discuss cognitive processes by which visual stimuli are easily recognized and thus are essential to subsequent evaluation of products and environments. Such a perspective may have been motivated mainly by the need to promote the more pressing values of usable design. Still, given our knowledge about human nature, this position was not sustainable in the long run. It is argued that the value of visual aesthetics stems from its contribution to pleasure and

well-being e. Used without permission under the Fair Use Doctrine as permission could not be obtained. Aesthetics as an extension of the Self: Harry Potter skin for a Blackberry smartphone Visual aesthetics may temporarily take a side seat to other design aspects when other needs are more pressing; some people may be less sensitive or less in a need for aesthetic environments Bloch et al. Still the universality of visual arts across cultures and the pleasures induced by it are cited by evolutionary psychologists as evidence for the fundamental role of aesthetics in the psyche of modern Homo sapience Dutton, Aesthetic experiences are associated with affective responses and reflective thought Leder et al. Research using functional magnetic resonance imaging fMRI found further neurophysiologic support for this association in the context of product packaging Reimann et al. Whereas task-related criteria are often based on extrinsic motivation , aesthetics, through pleasure and engagement, primarily contributes to intrinsic motivation. Thus, there is little reason to believe that the need for aesthetics disappears in front of the computer. Visually pleasing design enriches our experiences with interactive systems just like they do with any other environment Hassenzahl, Consequently, we expect pleasurable interactions to make us happier and thus to improve our well-being Lyubomirsky et al. Furthermore, they may make us more tolerable of other design imperfections Norman, and improve our task performance under certain conditions Moshagen et al. These forms of idiosyncratic attachments Kleine et al. This trend, though on a smaller scale, can be found in hardware - e. Software skins can be downloaded, for free or pay, for most popular applications. These are manifestations not only of who those individuals are, their past and present, and their affiliations Kleine et al. Harry Potter skin for the Windows 7 operating system Copyright terms and licence: Harry Potter skin for the Google Chrome browser Those consequences are based on the idea that aesthetic impressions can be very fast. These very fast impressions are the first opportunity we have to form an attitude towards an object e. Those initial attitudes are likely to form at a relatively subconscious level and therefore may be relatively uniform across people, relative to more elaborated evaluations Kumara and Gargb, The primacy of first impression on attitudes is well documented in social science research. Such preferences for aesthetic appearance may be the result of evolutionary adaptation Rhodes, Research has documented numerous contexts in which people with good looks enjoy preferential treatment in the labor market Hamermesh and Biddle, , in credit markets Ravina, , and even in the classroom Hamermesh and Parker,

**Chapter 2 : Psychology of Art and Aesthetics - Psychology - Oxford Bibliographies**

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Abstract art is more ambiguous than figurative art. The importance of meaning[ edit ] The popular distaste for abstract art is a direct consequence of semantic ambiguity. This theory suggests that humans, like all life forms are biologically oriented toward continued survival but are uniquely aware that their lives will inevitably end. TMT reveals that modern art is often disliked because it lacks appreciable meaning, and is thus incompatible with the underlying terror management motive to maintain a meaningful conception of reality. A t test comparing the mortality salience condition and the control found that participants in the mortality salience condition found the art less attractive. Participants reported higher scores on the Personal Need for Structure scale in absurd rather than abstract art. Yet, the question remains as to whether the same kinds of results would be obtained with an expanded sample of abstract expressionist or absurd images. When measuring "interestingness" and "pleasingness," viewers rated works higher for abstract works that were more complex. With added exposure to the abstract work, liking ratings continued to rise with both subjective complexity viewer rated and judged complexity artist rated. This was only true up to a certain point. When the works became too complex, people began to like the works less. Behavioral results demonstrated a significantly higher preference for representational paintings. FMRI results revealed that activity in the right caudate nucleus extending to putamen decreased in response to decreasing preference for paintings, while activity in the left cingulate sulcus , bilateral occipital gyri , bilateral fusiform gyri , right fusiform gyrus , and bilateral cerebellum increased in response to increasing preference for paintings. EEG brain scans showed that while viewing abstract art, non-artists showed less arousal than artists. However, while viewing figurative art, both artists and non-artists had comparable arousal and ability to pay attention and evaluate the art stimuli. This suggests abstract art requires more expertise to appreciate it than does figurative art. Individuals chronically disposed to clear, simple, and unambiguous knowledge express a particularly negative aesthetic experience towards abstract art, due to the void of meaningful content. Neuroticism was positively correlated with positive ratings of abstract art, while Conscientiousness was linked to liking of representational art. Openness to Experience was linked to positive ratings of abstract and representational art. In implicit evaluation, people reacted more positively to the figurative art, where they could at least make out the shapes. In terms of explicit evaluation, when people had to think about the art, there was no real difference in judgement between abstract and representational art. Many studies have been conducted on the impact of handedness and reading direction on how one perceives a piece of art. Results indicate that both factors contribute to the process. Furthermore, hemispheric specialization leads individuals to read from left to right, giving those readers an advantage. Participants were shown images as well as its mirror image, and were asked to indicate which they found more aesthetically pleasing. The researchers looked at Russian readers, Arabic readers, and Hebrew readers that were right handed and non-right-handed. Participants viewed pictures taken from art books that were profiles or human faces and bodies in two blocks. Images were shown to participants as inward or outward facing pairs and then in the opposite orientation. After viewing each pair, participants were asked which image of the pair was more aesthetically pleasing. When looking at the results for handedness, right-handed participants had "left preferences" and non right-handed participants had "right preferences". The original paintings followed the convention that viewers "read" paintings from left to right; therefore, the patterns of light directed the audience to view the painting in the same manner. Findings indicated that participants preferred the original paintings, most likely due to the western style of viewing paintings from left to right. The left-light bias is the tendency for viewers to prefer artwork that is lit with lighting coming from the left hand side of the painting. Researchers predicted that participants would prefer artwork that was lit from the left side and when given the option, they would choose to place lighting on the upper left side of a piece of artwork. Participants found paintings with lighting on the left to be more aesthetically pleasing than when it was lighter on the right side

and when given the opportunity to create light on an already existing painting. Studies have found mixed results concerning the left cheek bias and the right cheek bias. Male and female participants were shown male and female portraits, each displaying an equal number of left or right cheek positions. Participants were shown each portrait in its original orientation and in its reversed orientation and asked which portrait they preferred more. The shift from right to left cheek bias post 18th century may represent more personal or open facial characteristics. In aesthetics research, complexity has been divided into three dimensions that account for the interaction between the amount of elements, differences in elements, and patterns in their arrangement. Furthermore, this characteristic in aesthetics consists of a wide spectrum, ranging from low complexity to high complexity. Key studies have found through Galvanic skin response that more complex artworks produce greater physiological arousal and higher hedonic ratings, [37] which is consistent with other findings that claim that aesthetic liking increases with complexity. Most important, several studies have found that there exists a U-shape relationship between aesthetic preference and complexity. Some researchers break complexity down into two different subparts: Objective complexity is any part of art that could be manipulated. For visual art that may be the size of the shapes, the number of patterns, or the number of colors used. For acoustic art that could include duration, loudness, number of different harmonies, number of changes in rhythmic activity, and rate of rhythmic activity. In this form each individual person rates an object on the complexity they perceive. Therefore, subjective complexity might depict our view of complexity more accurately, however, the measure may change from person to person. One form of using computer technology to rate complexity, is by using computer intelligence when rating an image. Computer intelligence is assessed by recording the mathematic formulas used in creating the images. Human involvement, adding or taking away aspects of the image, could also add or take away from the complexity of the image. This process is done by subtracting and adding pixels to change the density of black and white paintings. This technique allowed researchers to use authentic artwork, instead of creating artificial versions of artwork, to control stimuli. However, there is limited research done on the comparison between part based complexity and human perception of complexity, making it unclear if people perceive images with more parts as being more complex. The Inverted U-Shape Hypothesis suggests that aesthetic responses in relation to complexity will exhibit an inverted-shape distribution. In other words, the lowest ratings in aesthetic responses correlate with high and low levels of complexity, which displays an "avoidance of extremes". Furthermore, the highest level of aesthetic response occurs in the middle level of complexity. This means that people increasingly like art as it goes from very simple to more complex, until a peak, when pleasantness ratings begin to fall again. A recent study had also found that we tend to rate natural environment and landscape images as more complex, hence liking them more than abstract images that we rate as less complex. When comparing popular music, for the time period, and perceived complexity ratings the known inverted-U shape relationship appears, showing that generally we like moderately complex music the most. People who have more experience and training in popular music, however, prefer slightly more complex music. A similar pattern can be seen for jazz and bluegrass music. Unlike the popular music experts, jazz and bluegrass experts did not show a distinct relationship between complexity and pleasantness. Experts in those two genres of music seem to just like what they like, without having a formula to describe their behavior. Since different styles of music have different effects on preference for experts, further studies would need to be done to draw conclusions for complexity and preference ratings for other styles. Dance Psychological studies have shown that the hedonic likings of dance performances can be influenced by complexity. One experiment used twelve dance choreographies that consist of three levels of complexity performed at four different tempos. Complexity in the dance sequences were created varying the sequence of six movement patterns. Overall, this study showed that observers prefer choreographies with complex dance sequences and faster tempos. One study tested peoples preferences on various art pieces, taking into account their personal preferences as well. The study found that gender differences exist in art preference. Women generally prefer happy, colorful, and simple paintings whereas men generally prefer geometric, sad, and complex paintings. An age difference in complexity preferences exists as well, where preference for complex paintings increases as age increases. This falls in line with the idea that conscientious people dislike uncertainty and enjoy control, thereby disliking artwork that might threaten such

feelings. Individual differences are better predictors for preference of complex art than simple art, where no clear personality traits predict preference for simple art. Although educational level did not have a direct relationship with complexity, higher educational levels led to more museum visits, which in turn led to more appreciation of complex art. Symmetry[ edit ] Symmetry and beauty have a strong biological link that influences aesthetic preferences. It has been shown that humans tend to prefer art that contains symmetry, deeming it more beautiful. Humans innately tend to see and have a visual preference for symmetry, an identified quality yielding a positive aesthetic experience that uses an automatic bottom-up factor. This research highlights the efficiency with which computers recognize and process symmetrical objects relative to non-symmetrical models. Findings suggest that perceptual fluency is a factor that elicits implicit responses, as shown with the Implicit Association Test results. In fact, research tries to integrate priming psychology , cultural influences and the different types of stimuli that may elicit an aesthetic preference. Further research investigating perceptual fluency has found a gender bias towards neutral stimuli. Furthermore, a main effect for gender preference existed in the males that consistently indicated a preference for symmetry in both abstract and real objects. This symmetry can be correlated to the attractiveness associated with the art form, since there is a correlation between human preference and symmetry. The good genes hypothesis for symmetry preference argues that symmetry is a biological indicator of stable development, mate quality and fitness and therefore explains why we choose symmetrical traits in our mates. When balanced, a composition appears stable and visually right. The positioning of even a single object, such as a bowl or a light fixture, in a composition contributes to preferences for that composition. When participants viewed a variety of objects, whose vertical positions on a horizontal plane were manipulated, participants preferred objects that were lower or higher in the plane of vision, corresponding to the normal placement of the image e. The center bias manifests can explain the preference for the most important or functional part of an object to occupy the center of the frame, suggesting a bias for a "rightness" of object viewing. When viewing variations on original artwork, such as the manipulation of the red, blue, and yellow areas of color in several Piet Mondrian paintings, design-trained and untrained participants successfully identified the balance centers of each variation. Both groups were sensitive to the distribution of color, weight, and area occupied. Expertise see Art and Expertise does not seem to have a large effect on perceiving balance, though only the trained participants detected the variation between the original work and manipulated versions. Participants tend to deem original artwork as original versus the manipulated works that had been both subtly and obviously altered with respect to the balance of the painting. Both masters and novices are equally susceptible to shifts in balance affecting preference for paintings, which may suggest that both artists viewers have an intuitive sense of balance in art. Please improve this by adding secondary or tertiary sources. Naive participants preferred popular art over high-art, while expert participants preferred high-art over popular art. The art can be rated on its levels of abstraction or place in time.

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**Abstract** Modeling human aesthetic perception of visual textures is important and valuable in numerous industrial domains, such as product design, architectural design, and decoration. Based on results from a semantic differential rating experiment, we modeled the relationship between low-level basic texture features and aesthetic properties involved in human aesthetic texture perception. First, we compute basic texture features from textural images using four classical methods. These features are neutral, objective, and independent of the socio-cultural context of the visual textures. Then, we conduct a semantic differential rating experiment to collect from evaluators their aesthetic perceptions of selected textural stimuli. In semantic differential rating experiment, eight pairs of aesthetic properties are chosen, which are strongly related to the socio-cultural context of the selected textures and to human emotions. They are easily understood and connected to everyday life. We propose a hierarchical feed-forward layer model of aesthetic texture perception and assign 8 pairs of aesthetic properties to different layers. Finally, we describe the generation of multiple linear and non-linear regression models for aesthetic prediction by taking dimensionality-reduced texture features and aesthetic properties of visual textures as dependent and independent variables, respectively. Our experimental results indicate that the relationships between each layer and its neighbors in the hierarchical feed-forward layer model of aesthetic texture perception can be fitted well by linear functions, and the models thus generated can successfully bridge the gap between computational texture features and aesthetic texture properties. It contains important visual information about an object and allows us to distinguish between animals, plants, foods, and fabrics. This makes texture a significant part of the sensory input that we receive every day. In the visual arts, texture is the perceived surface quality of a work of art. It is an element of two- and three-dimensional designs and is distinguished by its perceived visual and physical properties Graham and Meng, From the research point of view, textures are classified into tactile and visual textures. The former, also known as actual textures or physical textures, are actual surface variations Elkharraz et al. Physical texture is distinguished from visual texture by a physical quality that can be felt by touch Manfredi et al. Visual texture is the illusion of physical texture. Every material has its own visual texture. Photographs, drawings, and paintings use visual texture to portray their participant matter both realistically and with interpretation Guo et al. Above all, visual scientists have realized that the rich resource they are provided with by artists in the form of textures is worthy of scientific study Zeki, The challenge in aesthetic perception of visual textures and art is to understand the aesthetic emotion and judgment that are evoked when we experience beauty. To evaluate and explain beauty in science, models of aesthetic perception and judgment have been proposed in cognitive psychology and information science. According to the information-processing stage model of aesthetic processing, five stages-perception, explicit classification, implicit classification, cognitive mastering, and evaluation are involved in aesthetic experiences Leder et al. To discriminate between aesthetically pleasing and displeasing images, Datta et al. Additionally, Datta et al. Using structural equation modeling, Leder et al. Simmons explored the relationship between color information and the emotions they induced by measuring along two affective dimensions, namely pleasant-unpleasant, and arousing-calming Simmons, In their research, Cela-Conde et al. Reviewing from definitional, methodological, empirical, and theoretical perspectives of human aesthetic preferences, Palmer et al. The research of Bundgaard addressed the phenomenology of aesthetic experience, which showed why and how aesthetic experience should be defined relative to its object and the tools for meaning-making specific to that object and not relative to the feeling Bundgaard, Chatterjee

and Vartanian reviewed recent evidence that approves aesthetic experiences emerge from the interaction between sensoryâ€™motor, emotionâ€™valuation, and meaningâ€™knowledge neural systems Chatterjee and Vartanian, In experiment, Elkharraz et al. However, surprisingly little funded research has been conducted on the emotional qualities and expectations associated with specific textures. SynTex was coordinated by Profactor GmbH and conducted in collaboration with six other research institutes in the European Union. In fact, SynTex is the only project to have ever attempted to measure, model and predict the psychological effects of texture. A further outcome is in the work of Groissboeck, which focused on synthesizing textures for predefined, desired emotions described by a numerical vector in aesthetic space Groissboeck et al. We build upon this research, but go a step further in terms of significantly enhanced texture analysis, feature selection, and layered model-building for better interpretability, while achieving improved accuracy in the prediction of several core adjectives that define the aesthetic space. Expanding the aesthetic space used in Thumfart et al. After reviewing related work in Section Introduction, we present the four different categories of low-level features that were extracted to objectively represent the visual textures in Section Materials and Methods. Further, we describe feature selection using Laplacian Score to reduce the complexity of the aesthetic perception model. Section Results and Discussion summarizes the semantic differential rating experiment, in which we collected aesthetic perceptions from participants with selected textural stimuli. We describe the modeling approaches in Section Results and Discussion; Section Conclusions conclude the paper. Materials and methods Selected textural stimuli The visual texture database of stimuli used in our experiment consists of selected high-resolution textural images, which are also the experiment materials used in SynTex project. This database is the Supplementary Material of the paper published by Thumfart et al. The project SynTex is by far outdated and the link that provides the visual texture database has been closed. The used visual textures for our study can be sent to readers upon request via email or dropbox exchange. Readers can contact us by using the email addresses given in the affiliations. It includes natural, artificial, regular and stochastic textures in the textural stimuli, which were selected from various texture databases.

**Chapter 4 : Psychology of art - Wikipedia**

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Smeaton, Hyowon Lee " Collocated, multi-user technologies, which support group-work are becoming increasingly popular. Many applications have been developed for such technolog Many applications have been developed for such technologies which support the work and entertainment needs of small groups of people. None of these applications however, have been studied in terms of the interactions and performances of their users with regards to their personality. In this paper, we address this research gap by conducting a series of user studies involving dyads working on a number of multi-user applications on the DiamondTouch tabletop device. In this paper, we discuss the design of painting data, which is neutral emotionally, for use in the training and building of models of cognition. The data will provide training examples for visual cortex and emotion modules. There are two goals to this research: Despite its centrality to human thought and practice, aesthetics has for the most part played a petty role in HCI research. Increasingly, however, researchers attempt to strike a balance between the traditional concerns of HCI and considerations of aesthetics. Thus, recent research on the visual aes However, the lack of appropriate concepts and measures of aesthetics may severely constraint future research in this area. To address this issue, we conducted four studies in order to develop a measurement instrument of perceived web site aesthetics. The classical aesthetics dimension pertains to aesthetic notions that presided from antiquity until the 18 th century. These notions emphasize orderly and clear design and are closely related to many of the design rules advocated by usability experts. While both dimensions of perceived aesthetic are drawn from a pool of aesthetic judgments, they are clearly distinguishable from each other. Each of the aesthetic dimensions is measured by a five-item scale. The reliabilities, factor structure and validity tests indicate that these items reflect the two perceived aesthetics dimensions adequately. Show Context Citation Context A general factor emerged which was associated with emotional expression, harmony of design, harmony of coloring and dynamic expression. Despite its centrality to human thought and practice, aesthetics has for the most part played a petty role in humanâ€”computer interaction research. Increasingly, however, researchers attempt to strike a balance between the traditional concerns of humanâ€”computer interaction and considerations of aesth Increasingly, however, researchers attempt to strike a balance between the traditional concerns of humanâ€”computer interaction and considerations of aesthetics. The classical aesthetics dimension pertains to aesthetic notions that presided from antiquity until the 18th century. While both dimensions of perceived aesthetic are drawn from a pool of aesthetic judgments, they are Show Context Citation Context A general factor emerged which was associated with emotional expression, harmony of design, harmony of colouring and dynamic expression. The second level consis This paper describes an adaptive brain-body interface BBI that was designed to cater for traumatic brain injured personnel to use the computer screen as a means for communicating, recreating and controlling their environment. The paper describes how the initial interface was developed an The paper describes how the initial interface was developed and optimised for this group of personnel. It also deals with the challenges involved in designing an adaptive interface and the adaptive features incorporated in to the interface. Schiff [10] states tha

**Chapter 5 : R. W. Pickford, Psychology and Visual Aesthetics - PhilPapers**

*Psychiatry and Psychology in the Visual Arts and Aesthetics: A Bibliography.* Norman Kiell - - *Journal of Aesthetics and Art Criticism* 24 (2) *Psychology and Aesthetics.*

Art is a human phenomenon, and therefore aesthetics is fundamentally a psychological process. Psychological aesthetics evolved from the study of aesthetics by philosophers such as Baumgarten and Kant. It was Gustav T. Fechner see Foundational Works who took aesthetics out of the realm of contemplative musings by developing rigorous procedures for studying the arts. He subjected beliefs derived from philosophical work, such as the golden section, to empirical investigation. Researchers address a multitude of psychological topics such as visual and auditory perception, knowledge and memory, and preferences and emotion, using a variety of approaches, from experimental and physiological methodologies to qualitative analyses and state-of-the-art imaging techniques. Furthermore, aesthetics researchers compare art experts to novices, develop models of aesthetic reactions to works of art, and look at how people perceive art in museum settings. Although aesthetics has traditionally been closely tied to beauty, research today encompasses those works of art that elicit negative reactions and even those that are intended to offend. The literature included in this article focuses on classic texts that have proposed an original theory, concept, or debate related to the psychology of arts and aesthetics as well as more recent works that have attempted to revisit prior work and stimulate current debates. The order of presentation is based more on the similarity or contrast among the various sources and on the progression of ideas than on a strict chronology. The first section presents the foundational readings. This is followed by articles that provide general overviews and present formal models integrating the many aspects of the psychology of art and aesthetics. Basic features of art-related stimuli and mediators of the aesthetic experience are then examined. The next broad sections describe literature on the search for meaning during aesthetic experiences, the influence of personal characteristics such as art expertise and personality on the perception and interpretation of art, and the experience of aesthetic emotions. Descriptions of three emerging areas in psychological aesthetics, namely, neuroaesthetics, evolutionary aesthetics, the psychology of photography, and museum research follow these sections. Finally, psychological aesthetics in the context of education and culture is presented. Foundational Works This section examines foundational literature reflecting the history and contemporary state of the psychology of art and aesthetics. Fechner is often associated with the founding of the psychology of art and aesthetics. It served as a catalyst for the works of future scholars, such as Arnheim , which situates the study of aesthetics within the context of Gestalt psychology, and Gombrich , which considers aesthetics within the context of general psychology. Berlyne and Kreitler and Kreitler are seminal works that revived the field in the s by generating numerous testable hypotheses, especially those concerning features inherent in the stimulus. Winner and Solso reflect the scholarship that has been undertaken in research carried out during the 20th century. Tinio and Smith presents an introduction to the field and is a broad representation of the current issues and future directions of the psychology of art and aesthetics. Art and visual perception. It focuses on how the meaning and expressiveness of an artwork are derived from its compositional structure and the dynamic interactions among the various features. Thus, even the most complex of experiences ultimately stems from the configuration of compositional elements. Fechner ushered in not only a completely new approach to conceptualizing aesthetics, but also, drawing heavily on his psychophysics background, he introduced new quantitative methodologies that provided greater experimental control for studying aesthetics issues. A study in the psychology of pictorial representation. The author delves into longstanding issues such as the role of imitation of nature in art. Gombrich claims that artists create by using what they know and then compare this creation to what they see. Psychology of the arts. New directions in aesthetics, creativity, and the arts. This book covers the aesthetics of visual arts; creativity; the cognitive psychology of music, literature, and visual arts; and the influence of affect and personality on creativity and aesthetic experience. This is a great introduction into the field. Cognition and the visual arts. Addresses phenomena such as figure-ground, perceived contrast, visual ambiguities, illusions, and visual perspective as well as observer-related factors such as memory and expertise

in arts. The Cambridge handbook of the psychology of aesthetics and the arts. The psychology of the arts. Topics are explored from multiple perspectives. For example, the chapter on the audience or perceiver of art includes the perspectives of Freud, Fechner, Berlyne, and Eysenck. Users without a subscription are not able to see the full content on this page. Please subscribe or login. [How to Subscribe Oxford Bibliographies Online](#) is available by subscription and perpetual access to institutions. For more information or to contact an Oxford Sales Representative [click here](#).

## Chapter 6 : 5 Psychology Studies Show How People Perceive Visual Information

*INTRODUCTION TO THE PSYCHOLOGY OF AESTHETICS JOHN P. McLAUGHLIN In this course, we will try to understand the human need to produce and experience art by using the strategies and tools of scientific psychology. We will look at empirical research on our perception and r.*

Are you curious about how we take in the visuals in an environment filled with strong sensory stimuli and how we interpret what we see? The phenomenon is called visual information processing or visual perception. Visual information processing is the visual reasoning skill that enables us to process and interpret meaning from visual information that we gain through our eyesight. Visual perception plays a big role in our everyday life. It helps us in learning and interacting with others. Because of the ease with which we rely on perception, we tend to overlook the complexity behind it. Understanding how we interpret what we see can help us design and organize our visual information. Want to get started right away? Check out these templates! Top-down processing, also known as conceptual-driven processing, happens when we form our perceptions beginning with the big picture. We make our best guess of what we see based on expectations, beliefs, prior knowledge, and past experiences. In other words, we make calculated assumptions. According to Gregory, we are typically correct in those assumptions. The Hollow Face Experiment One of the trials Gregory ran in order to test his theory was called the hollow mask experiment. He used the rotation of a Charlie Chaplin mask to explain how we perceive the hollow surface of the mask as protruding based on our expectation of the world. Our prior knowledge of a normal face is that the nose protrudes. So, we subconsciously reconstruct the hollow face into a normal face. Because of this, the brain has to make its best guess based on our past experiences or prior knowledge. The visual information we see is combined with previously stored information about the world, which we have built up as a result of experience. Our surroundings help to provide context to the visual information we absorb. In , Thomas Sanocki and Noah Sulman conducted an experiment on color relations in order to gauge the impact of color on the visual short-term memory. Four sets of trials were carried out using both harmonious and disharmonious color palettes. In each trial, observers were presented with two sets of color patterns and asked to compare them. Observers were also expected to rate whether the pattern was harmonious. Based on the results of the study, Sanocki and Sulman were able to say that: People remember color patterns better when the color palette is harmonious. People remember patterns with fewer colors 2-color palettes better than patterns with more colors 4-color palettes. The contrast of surrounding colors impacted how well we remember the color pattern. In other words, color differences between the content and the background may enhance our ability to focus our attention on the content itself. Binocular Rivalry Phenomenon Binocular rivalry occurs when our eyes see two different images in the same location. One image dominates while the other is suppressed. The dominance alternates periodically, so rather than seeing a single combination of both visuals at all times, we experience the alternation of the images over time as the two visuals compete for visual dominance. Thomas Vaughan, and Nancy Kanwisher observed this phenomenon first-hand. In their experiment, four participants were shown, through red-green filter glasses, an image of a face and a house in an organized set. Each eye was set to see one specific image at a time. The visual-selective responses of observers were monitored using functional magnetic resonance imaging fMRI. According to their experiment, The fMRI for all observers indicated strong binocular rivalry when dissimilar visuals were presented. Binocular rivalry happens during the visual processing stage. In other words, during the short period of time when our eyes rest upon two dissimilar images that are close together, we will not be able to determine what we actually see. Influence of Typography and Aesthetics on Reading Did you know that typography can affect your mood and your ability to solve problems? In two different studies, participants were divided into separate groups and given 20 minutes to read a typeset issue of a magazine The New Yorker on a tablet device. One of the groups was presented with a badly typeset version, while the other group was presented with a properly typeset version. During the session, participants were interrupted and asked to estimate the amount of time they thought had passed since experiment began. The results of the study showed that: Participants from both groups underestimated their reading time. This implies that reading is an engaging

task. Participants in the proper typography group greatly underestimated their reading time compared to participants that were reading items with poor typography. This implies reading with good typography is even more engaging. Why are we able to understand visuals more thoroughly than text? As humans, we have the ability to gather context based on what we see. When we fix our eyes on something, we have the ability to form an understanding of the environment and recognize the meaning of a scene. What is Perception of Scene Gist? According to Ronald A. It includes not only the perception of individual objects, but also things like their relative locations and expectations about what other kinds of objects might be encountered. Henderson from University of Edinburgh conducted an experiment on the influence of color in activating scene gist. The experiment was conducted in three different trials. Undergraduates were exposed to a few hundreds of photographs of natural or man-made objects in various conditions. Participants were asked to determine whether or not a target object matched the scene they were seeing. Normal and blurred photographs with colors and monochrome sample photographs were presented. To determine the role of colors in our scene perception, the following sample photographs were used: They also studied the range of abnormality with the following samples: Observers were able to match the scenes and target object within a second. This implies people can quickly get the meaning of a normal scene. Observers were able to match the scenes in less time if they were colored correctly as compared to black and white. This means colors help us understand scenes better. Overall, colors help define the structure of objects. Understanding how people perceive visual information reveals a great deal about the best practices for designing your infographics. Try out these templates and get started on creating your own infographic now!

### Chapter 7 : Formats and Editions of Psychology and visual aesthetics. [calendrierdelascience.com]

*The results of the review support the conclusion that aesthetic response can be studied rigorously and meaningfully within the framework of scientific psychology. Keywords visual perception, color, harmony, shape, spatial composition, art.*

### Chapter 8 : Evolutionary aesthetics - Wikipedia

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