

Research Article

COMPOSITIONAL QUALITY ASSESSMENT OF DIGITAL PAINTINGS BY MALE SEX OFFENDERS

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ARTICLE INFO

ABSTRACT

Keywords:

Digital Paintings, Polychrome, Monochrome, Realist, Surrealist

Article History:

Received: 11-06-2024

Accepted: 15-11-2024

Published: 25-11-2024

Digital paintings depicting the repercussions of sexual crimes are utilised in this study to investigate the involvement of male sex offenders in Nairobi West Prison. By comparing evaluations according to styles, colour schemes, and themes, the research delves into the viewer's impression of these paintings. Researchers discovered that the more often participants were exposed to the digital paintings, the more positively they were rated. Among the participants, 78.6% had a strong affinity for polychrome schemes, whereas 83.9% preferred surrealist style. Offenders' family-related themes elicited the most intense emotional response from 60% of responders. The possible advantages of active engagement and participation, as well as the ways in which prisoner audiences engage with ready-made art, are enhanced by this research. To improve the viewing experience for inmates, the results stress the significance of interacting with digital paintings.

Cite this article:

Oguda, B. G. A., & Vikiru, D. G. (2024). COMPOSITIONAL QUALITY ASSESSMENT OF DIGITAL PAINTINGS BY MALE SEX OFFENDERS. *Sprin Journal of Arts, Humanities and Social Sciences*, 3(11), 51–62. <https://doi.org/10.55559/sjahss.v3i11.448>

Introduction

Studies have been undertaken in different environments, such as museums and prisons, to investigate the impact of observing, analysing, interpreting, and appreciating art. Nevertheless, there is a dearth of study pertaining to this specific domain within correctional facilities. The majority of studies examining art viewing typically compare the experience of viewing art in museum settings with that in laboratory situations. Prior research has mostly examined visitor behaviour and appreciation following exhibitions, without delving into a thorough evaluation of the content. Kirchberg and Tröndle (2012, p.435) documented those empirical studies on visitors and their exhibition experiences received poor scores.

This study seeks to examine participants' evaluation of the compositional excellence of digital artworks that depict the repercussions of sexual offences. The study seeks to investigate the impact of repeated exposure on participants' assessment of paintings across three dimensions: 1) their overall perception of the paintings' effectiveness, 2) Assessment of the aspects that make up a composition, such as its visual appeal, tonal qualities, substance and significance, clarity of composition, and emotional effect, and 3) Individuals' inclination towards certain colour schemes and styles, as well as their amount of stimulation triggered by various topics. This method is more focused on promoting art engagement among prisoners and seeks to offer valuable perspectives on the experiences of viewing art in prisons.

Literature Review

Engaging in art viewing may lead to diverse emotional responses, sometimes as a consequence of passive engagement. According to Helguera (2011, p.15), all art has the potential to involve participation. This participation can take different forms: cooperative participation, which involves contributing to the structure and composition of the artwork; directive participation, which involves engaging in various activities related to the artwork; creative participation, which involves providing meaningful input to the artwork; and nominal participation, which involves the viewer being connected to the artwork. This research employs the concept of nominal participation, suggesting that just seeing and deeply reflecting on the work might be considered a kind of involvement.

Viewing as Form of Audience Participation in the Arts

Brown and Novak-Leonard (2011, p.5) studied audience development through participation evaluation, focusing on five types of participation: observational, commitment development, crowdsourcing, collaborative creation, and audience as artists. They proposed observational participation, which includes art-oriented experiences and ambient activities. This study focuses on nominal participation of sex offenders through viewing digital artworks, contributing to the understanding of art-oriented experiences and ambient activities.

The perception, elaboration, comprehension, and acknowledgment of art are significantly influenced by viewing and processing time Carbon (2017, p.2). Research has shown that the

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<https://doi.org/10.55559/sjahss.v3i11.448>

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typical duration for seeing artwork at a temporary exhibition lasting 28 hours ranges from 25.7 to 41 seconds per picture. However, when individuals come in groups, they tend to spend longer time viewing the artwork. The average time frame for contemplation at the Chicago Art Institute is 28 seconds. Carbon perspectives prioritise the achievement of temporary exhibits with a restricted selection of artworks, enabling spectators to concentrate on the subject matter. The current study reduces digital drawings viewed to 24 and allows respondents to view in groups of 5-7. This technique enables viewers to enhance their understanding of the artwork and form enduring memories by engaging in thorough artistic study. Art programs now prioritise collaborative, guided, and imaginative engagement, while placing less emphasis on nominal involvement.

This study investigates the experience of criminals as they see and assess artworks created by the researcher in prison conditions. The topic of art viewing has mostly been examined within the setting of museums (Carbon, 2017, p.3), but this study aims to explore the participants' active participation in the production of artwork in prison art programs.

Image perception and processing by the Audience

Locher (2003, p.3) posits that visual scanning allows for spontaneous interpretation and evaluation of composition elements. Huston & Huston (2015, pp. 479–499) propose that the perception of art stimuli may differ depending on transient state variables, past experiences, and hereditary factors. Artwork may be assessed using basic characteristics such as colour or emotionally evocative factors, as well as information pertaining to figurative and representational content imbued with significance.

Locher (2015, p.16) suggested that, the aesthetic experience of visual art may be divided into two distinct phases: the first phase encompasses the viewer's first perception, while the second phase comprises the growth of aesthetic appreciation and pleasure. The first phase involves the interaction between the pictorial content and the viewer's personal experience, indicating their cognitive structures. The second phase entails the cultivation of aesthetic discernment and gratification derived from purposeful examination of the image's focus points. Locher (2007, p.3) established a connection between the initial categorisation of visual elements and the overall perception of pictorial aspects. However, this research used more complex levels of compositional components to examine how viewers assess digital paintings. The third level, regarded as the pinnacle, communicates the abstract and symbolic significance of an artwork via its substance and creative technique. The research also discovered that the spectator's perception of the same artwork might be altered by previous presentations, leading to varying impacts on the viewer. The primary factors that determine subjective appraisal are visual impact, tonality, substance and meaning, compositional clarity, and emotional effect.

Content Organization in Paintings

Artistic works created in expressive forms elicit unpleasant feelings, using shapes and vibrant colours that often convey negative subject matter (Tavaragi & Sushma, 2016, p.8). Colors play a significant role in influencing the mood of an artwork and triggering human feelings (Bruder & Ucock, 2000, p.5). Viewers' judgment can be affected by the perceived pleasantness of color combination, with pleasant colors resulting in positive judgment and unpleasant colors causing negative judgment. Pelowski et al. (2017, p.7) found a reduction in preference for colourless drawings, but no clear discussion exists on how the style of painting influences preference. This research conducted a comparison between monochrome and polychrome schemes in

order to establish a correlation between style, colour schemes, and topics in painting. Colours with shorter wavelengths inspire less pleasure compared to colours with longer wavelengths, such as yellow and red. On the other hand, colours that are brighter and more saturated evoke a larger sense of pleasure (Jasna, 2018, p.8; Bart, 2013, p.12).

Abodunrin's (2017, p.5) research reported that, photos lacking distinct colours and featuring stripes and intricate textures are seen as boring. On the other hand, images that are vividly coloured, with clear lines, and obvious brushstrokes are seen as vibrant and alive. These findings indicate that the evaluation and perception of excitement are influenced to some extent by observable artistic elements such as colour, form, and line. The viewer's aesthetic judgement, perception, and emotion are also influenced by the content and creative style. The research conducted by Bruder and Ucock (2000, p. 9) revealed that realistic pictures had an impact on the attractiveness of paint.

This study investigates the use of eternal themes like death, sex, and violence in art to evoke emotion, focusing on valence and influencing viewer's love response (Tans, 2000, p.11). Current research has focused on surrealism and graphic painting styles to evoke negative feelings about sexual crimes. The project seeks to validate if same outcomes may be achieved using tangible forms, by dissecting new connections and investigating unexplored ones.

Theme Development for the digital paintings

Sexual assault is a major problem in human rights and public health because it has devastating psychological and physiological effects on victims, perpetrators, and their relationships. Visual representation is often overlooked in discussing the consequences of sexual crimes. This study supports the use of visual images in discussing these consequences, citing research by Panke (2016, p.3) and Baralaei and Najmabadi (2015, p.3), which suggest that visual impressions have a substantial influence on communication and are easily remembered.

Sexual offenders often face rejection from family and friends, leading to stigma and isolation (Robbers, 2009). Labelling individuals as social outsiders by their community members may lead to feelings of despair, worry, anguish, dread, humiliation, and hopelessness (Robbers, 2009). The penalties for sexual offences range from lengthy jail terms to life sentences, the death penalty with or without parole, and the death penalty itself. An example of this is the death penalty handed down in the "Nirbhaya" case in 2013, which included a jail suicide. When a sex offender's family members are associated with them, they also endure stigma, ostracism, humiliation, and harassment (Levenson & Tewksbury, 2009, pp.55-66). Victims' loved ones also face prejudice, discrimination, shame, and abuse when linked to a sex offender (Gill & Tutty, 1999, pp.20-31). There have been reports of attempted suicides among youngsters who have experienced sexual abuse. (Dube, Anda, Whitfield, Brown, Felitti, Doug, Giles, 2005, pp.430-436). The subjects for the digital paintings generated were inspired by the study's emphasis on the effects of sexual offences.

Method

Creswell (2014) set out to evaluate how people perceive digital artworks' compositional features after seeing them many times in two different settings. A total of fifty-seven (57) convicts from Nairobi West Prison took part, with thirty-nine seeing the artwork on a hall display and twenty-eight seeing it on a big screen. Participants were briefed on specific art terminologies and divided into exposure and rating phases. The study used 24 digital paintings categorized by colour scheme, style, and theme. Participants had short, repeated viewings—up to fifteen sessions

spread over five weeks, with two days between each session—in order to prevent overexposure. The group seeing the artworks on screen had a 20-minute viewing session, while those in the exhibition hall had 35-minute sessions.

In this investigation, two exposure frequencies were manipulated: F0, which refers to the introduction of fresh stimuli during the rating phase, and F15, which represents the presentation of stimuli fifteen times. The experimental strategy used in this study is similar to the one utilised in previous studies conducted by (Zajonc, Shaver, Tavris & Van Kreveld, 1972). The researchers performed an observational study on a temporary art display including a small collection of digital artworks focused only on the repercussions of sexual offences. Six paintings were intentionally chosen and not shown again during previous presentations, but were presented at the grading process. The exhibition attendees had varying viewing distances as they spent an average of 1.9 minutes repeatedly observing each piece. In order to prevent any effects that are particular to certain stimuli, the digital artworks were shown in a varied sequence throughout each viewing session. The displayed artworks had consistent dimensions of 83.7 cm in width and 117.8 cm in height in order to account for any potential size-related influences. During the screen watching, participants were positioned at a distance of 1.7 meters from each picture, which was shown for a duration of 3000 milliseconds. Additionally, a backward masking technique was used for 800 milliseconds. The responders were shown with many exposures to the digital artworks, which posed the tough task of classifying, understanding, and mastering them intellectually. The emphasis was on early presentations to achieve maximal impact since the exposure effect is considered the most powerful during the first 10 exposures.

During the rating phase, a questionnaire was given at the conclusion of 15 viewing sessions to assess the artwork. The participants' responses to the digital artworks were gauged using a questionnaire derived from Likert scales (range: 1-5: 1=strongly disagree, 5=strongly approve). The questionnaire was based on Jorgensen's (1998) twelve classes of art image attributes, which are classified as perceptual (attributes identified by looking at an image), interpretive (attributes based on a viewer's opinion), and reactive (attributes that reflect an emotional or intellectual reaction of a viewer) aspects of an image. It evaluated the artwork based on visual impact, tone, substance and meaning, compositional clarity, and emotional effect. The questionnaire, which was intended to be semi-structured and self-administered to the selected sample, was divided into two sections. The first featured sixteen questions meant to obtain broad information on participants' perceptions of digital paintings as a medium for discourse. Section 2 of the exhibition included colour images of each of the twenty-four digital paintings that were part of the study, along with five criteria for evaluation: aesthetic impact, emotional effect, compositional clarity, content and meaning, and tone.

The second portion of the questionnaire for the screen presentation group did not include print pictures of the artworks. Instead, two rehearsal paintings (not utilised in the study) were shown to the respondents before to the administration of the art response questionnaire to familiarise them with the length of the image presentation and the time allotted for responding questions. Following the 30-second exhibition of each digital painting, the subjects had a 30-second interval to answer questions on a printed questionnaire, after which a bell sound was utilised to signal the end of the response session and the participants were required to return their attention to the screen. Locher et al. (2007) discovered that 10-seconds is adequate to gain

an overview of an image, but 30-seconds is the average observation length for an aesthetic judgement. There is evidence that, in addition to identification, placing titles with artworks influences processing by influencing interpretation (Gerger & Lederer, 2015) and comprehension. Carbon (2017). The digital artworks were therefore numbered consecutively and provided with short names for simple identification and to help participants throughout the rating.

Results

Respondents rated the efficacy of digital paintings based on 15 criteria. Each question was closed-ended and scored on an ordinal Likert scale from 1 to 5 (1 = strongly disagree, 2 = strongly disagree, 3 = neutral, 4 = agree, and 5 = strongly agree) to establish their degree of agreement with the assertions regarding the digital artworks. To examine the distribution of the answers, frequency tables were employed. The mean was used to determine central tendency, while the standard deviation was used to measure dispersion.

On a scale of 1-5, thirteen indications had significant agreement, while just two had a score of 4 or less. According to the data, 52% of respondents strongly felt that information delivered via digital art is valuable. The findings also suggest that, on average, respondents highly agreed that the digital paintings had a good impact on them, with 57% strongly agreeing. Another 57% of respondents strongly agreed that they could relate with the digital paintings, and 60% strongly agreed that the information in the digital paintings had considerably increased their awareness of the repercussions of sexual offences. According to the data, 59% of respondents strongly agreed that the new visual experience provided by the artwork was good, while 67% of convicts strongly agreed that the digital paintings were easy to interpret and 58% strongly agreed that the emotional provocation provided by the art work made them reconsider their actions. Furthermore, respondents were polled on the role of digital paintings as a simple way of discussing consequences, with 54% showing high agreement. It was also discovered that 53% of respondents strongly agreed that the digital paintings accurately depicted the scale of sexual offences, while 45% strongly agreed that the digital paintings were engaging. Another 52% of participants strongly felt that the digital artworks were artistically pleasing. In addition, 57% of respondents strongly agreed that the digital paintings kept their attention, while 70% strongly agreed that the digital paintings successfully conveyed the consequences of sexual offending. However, the data revealed that 42% of respondents believed that the artist's goal in showing the repercussions of sexual offences via digital paints was evident, and another 49% agreed that the themes depicted in the digital paintings generated emotions of remorse.

Descriptive Analysis of the Measures of Digital Paintings

The respondents scored their enjoyment for the 24 digital paintings based on visual impact, tonality, substance and meaning, compositional clarity and emotional effect. Given the multi-level structure of the ratings data, which included 57 answers for each artwork, the frequencies and variances were analysed to represent the total responses for the categories across all 24 paintings rated by all respondents. The evaluations were based on a 5-point ordinal scale ranging from 1 extremely poor, 2 bad, 3 neutral, 4 good, and 5 very good. Figure 1 shows the total mean score ratings assigned to all 24 artworks across the measures.

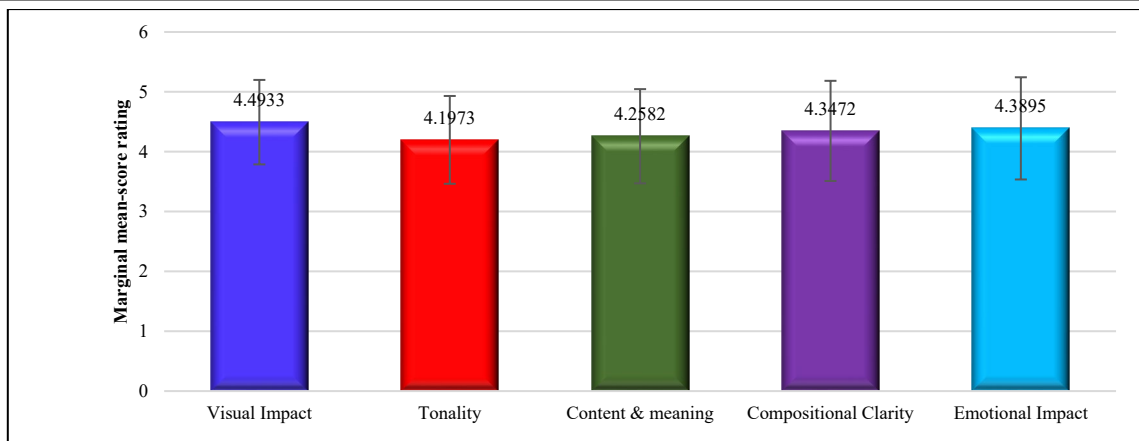


Figure 1: Mean score ratings of digital paintings

The findings indicate that the digital artworks were well regarded, with mean ratings above 4. The visual impact of the paintings had the greatest average rating of about 4.50, while tonality received the lowest grade of approximately 4.10. Although the overall

average rating was found to be higher than the mean score of 4 (good), not all artworks received averagely high evaluations from respondents. Figure 2 shows six artworks that placed highly in most of the metrics.



Figure 2: Highly rated digital paintings

Image1A is a surrealist picture in polychrome that depicts an offender tormented by worms, symbolising the curse of being a sexual offender. Image 2A depicts a monochrome surrealist painting of a young victim destroyed by sexually transmitted illness as a result of an assault, while image 3A depicts a surrealism polychrome painting of a victim stuck in inner agony. Image 4A is a realism polychrome painting of an offender being castrated, but

image 5A is a monochrome surrealist painting of a victim who has been shamed into silence by the offenders. Image 6A is a surrealist polychrome artwork depicting the shame imposed on a sexual offender's family. Paintings 3A, 4A, and 5A received better scores for emotional impact. Tonality, substance, and significance in painting 3A received higher scores, as did compositional clarity in painting 5A and visual impact in painting 6A.

The overall opinion is that five of the highly regarded artworks were surrealism, with just one being realist. Another note is that four of the top-rated paintings were polychrome, whereas just two were monochrome. Three of the highly rated paintings focused on victims, two on offenders, and one on families. These insights are supported by statistical evidence and qualitative data gathered

from focus group talks. According to the data, 83.9% of participants had a strong preference for surrealist paintings, while 78.6% preferred paintings with polychrome colour schemes. Figure 3 depicts digital artworks that received poor scores across all art metrics.



Figure 3: Digital Paintings with low ratings

Image 1B depicts a disturbed criminal in jail in a realism monochrome painting, whereas image 2B depicts a victim who has been hushed during a sexual assault. Image 3B is a monochrome artwork depicting an unhappy person on the approach of committing suicide. Image 4B is a surrealist polychrome painting depicting prejudice against an offender's family, while image 5B depicts the victim in anguish, dishonour, and shame after a sexual assault. Image 6B illustrates an offender's family, destroyed by poverty and sickness.

Overall, observations show that of the six digital artworks with poor ratings, four (4) were monochrome, two (2) were **Layered Ratings for Digital Paintings**

To conduct a thorough study, digital paintings were categorised into four main subcategories based on colour schemes (monochrome and polychrome), painting styles (realist and surrealist), topics (offender, offender's family, and victim-focused), and exposure frequency. The overall grades for each

polychrome, and four (4) were realism, two (2) were surrealist. The topics were three victim-based, two family-based, and one offender-based. The realism monochrome paintings with various topics were scored lowest. Image 3B and 6B received scores of less than 3.5 on all categories, with painting 6B receiving the lowest grade overall. The data suggest that 73.3% prefer monochrome patterns, whereas 78.6% prefer polychrome schemes. Similarly, 80.4% of respondents preferred monochromatic paintings, while 83.9% preferred the surrealism style. These findings confirm the categorisation of more monochromatic and naturalistic paintings as the lowest-rated.

subgroup were determined using the five-art metrics. Participants evaluated colour schemes and styles based on their preferences, and assessed themes based on the amount of arousal they evoked.

Ratings for Realist and Surrealist Paintings

A comprehensive evaluation was conducted to compare the ratings of monochrome and polychrome colour schemes across

the five metrics of digital artworks. The evaluations of the 24 paintings were seen to differ between the two painting styles, as shown in Table 1.

Table 1: Tests of between-subjects colour scheme effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	125206.012	1	125206.012	59004.264	.000
Colour Schemes	109.139	1	109.139	51.432	.000
Error	2856.188	1346	2.122		

The overall results indicate that the choice of colour scheme in the paintings had a substantial impact on the ratings provided by the participants, as shown by the F statistic with a p-value of 0.000, which is below the 0.05 threshold of significance. Figure 4 displays a graph that illustrates the significant difference in the average scores of the different rating measures between the two-colour schemes among the participants.

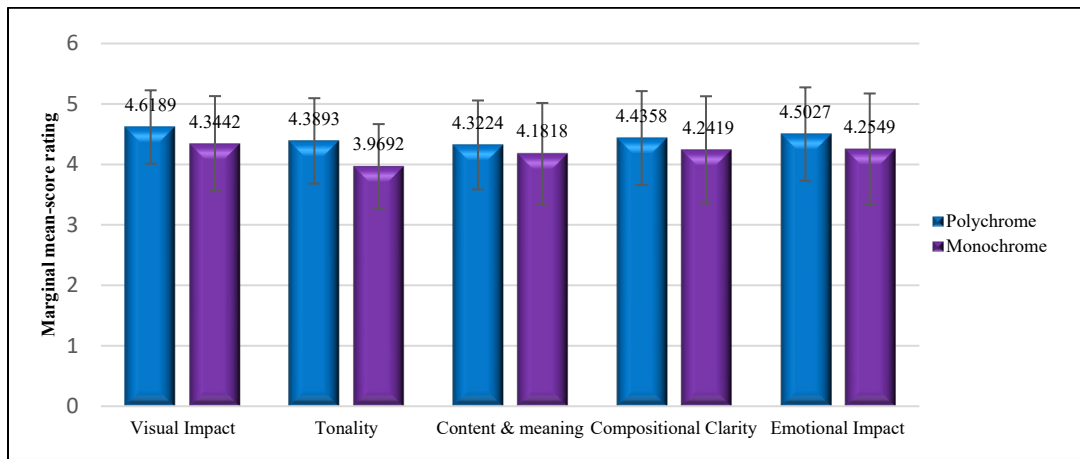


Figure 4: Marginal overall mean-score ratings of paintings by colour scheme

The paintings with both colour schemes received the greatest ratings for their visual impact when compared to the other characteristics that were evaluated. The polychrome paintings consistently received better ratings than the monochrome paintings in all categories, with the lowest ratings being in the category of substance and significance. The monochromatic

colour scheme paintings received lower scores in all aspects compared to the polychrome colour paintings. The research further aimed to determine the participants' degree of liking for the colour schemes. Figure 5 provides a concise overview of the replies on the preferred colour palettes for digital artworks.

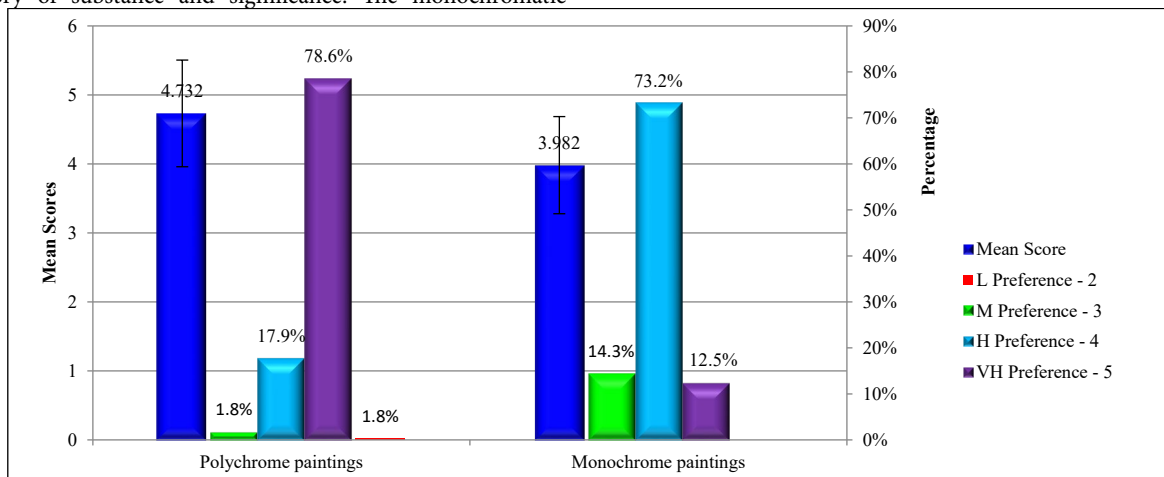


Figure 5: Preference for digital paintings by colour scheme

The findings indicate that 78.6% of the respondents had a strong preference for the polychrome paintings, whereas none of the respondents showed no preference for them. The average score was 4.73, with a standard deviation of 0.587. This suggests that, on average, the majority of respondents had a strong preference for the polychrome paintings. Conversely, it was noted that 73.2% of the prisoners shown a strong inclination for monochromatic artworks, while none (0%) expressed no preference whatsoever.

The average score for the degree of preference of the monochrome paintings was determined to be 3.98, with a standard deviation of 0.52. This suggests that, on average, most of the respondents expressed a like for these paintings.

Ratings for Realist and Surrealist Paintings

The disparity in scores between the realism and surrealist painting styles was evaluated across the five metrics of digital

artworks. The evaluations of the 24 paintings were seen to differ between the two painting styles, as shown in Table 2.

Table 2: Tests of Between-Subjects Style Effects on Ratings

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	124734.915	1	124734.915	64508.409	.000
Style	362.671	1	362.671	187.560	.000
Error	2602.656	1346	1.934		

The results indicate that the choice of painting style had a substantial impact on the ratings, as shown by the F statistic with a p-value of 0.000, which is below the 0.05 significance threshold.

Figure 6 displays the results of the notable impact of style on the rating scores of the different metrics.

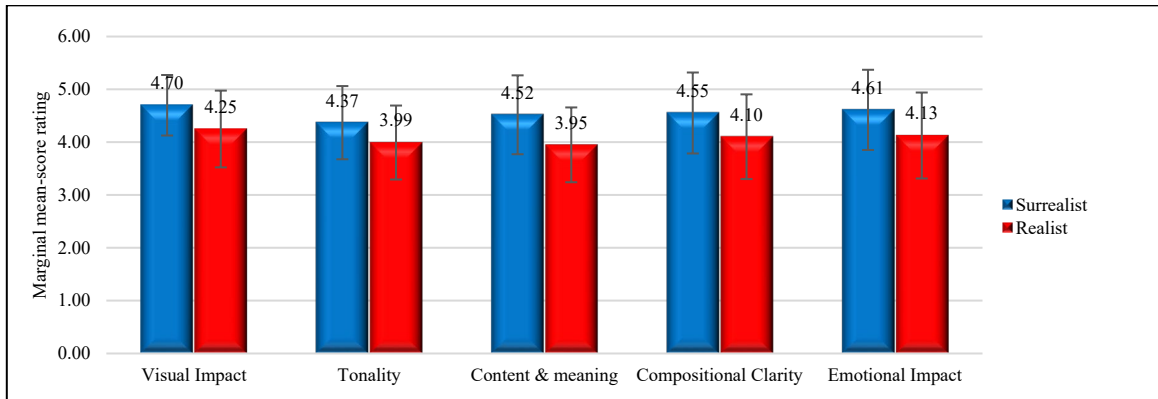


Figure 6: Marginal overall mean-score ratings of paintings by style

The data indicate that surrealism paintings consistently received better ratings than realist paintings in all the tested parameters. It was observed that both painting styles were typically rated best in terms of visual impact compared to other factors. However, surrealist paintings received their lowest rating in terms of tonality, while realism paintings received their

evaluations based on substance and meaning. The survey also aimed to determine participants' preference for different painting techniques. Figure 7 presents a concise overview of the comments about the desire for digital paintings based on different artistic styles.

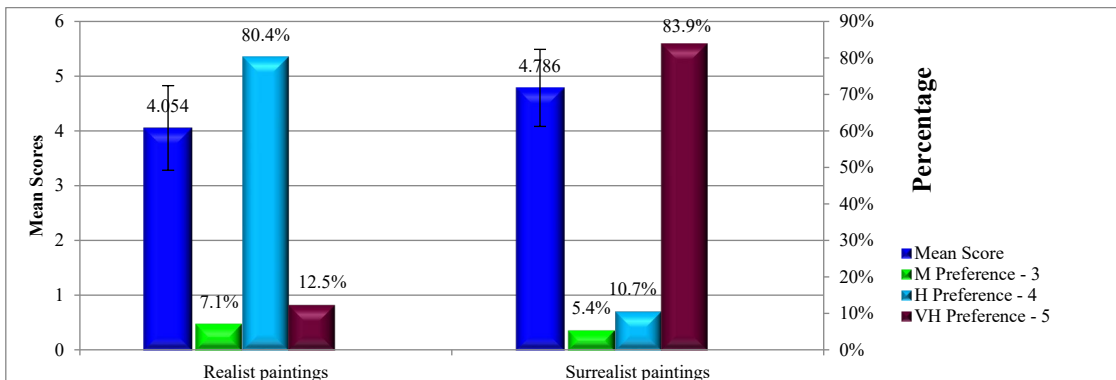


Figure 7: Summary of Responses on preference for Digital Paintings by Style

The realism paintings were strongly liked by 80.4% of respondents. Nobody (0%) stated a preference for realism art. The average score was 4.05, with a standard deviation of 0.44, indicating that most convicts exhibited a strong preference for

realism art. However, 83.9% of respondents enjoyed surrealist art and none (0%) did not, with a mean score of 4.79 and a standard deviation of 0.53. On average, sexual offenders liked the surrealist art style.

Ratings for Digital Paintings by Themes

The ratings were further assessed across the painting theme categories. Table 3 shows tests of between subjects' theme effects.

Table 3: Tests of Between-Subjects Themes Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	125941.105	1	125941.105	57832.697	.000
Themes	36.347	2	18.174	8.345	.000
Error	2928.980	1345	2.178		

The 24 digital artworks were thematically divided into three categories: sexual offender, victim, and offender family. The levels of evaluations provided to the artworks on all parameters assessed differed considerably among subjects. The results reveal that the themes selected for the paintings have a significant effect on the

rating provided by the respondents, as shown by the F statistic with a p-value of 0.000, which is less than the 0.05 threshold of significance. The findings of the themes' substantial influence on the rating scores for the five measures were graphed, as shown in the chart in Figure 8.

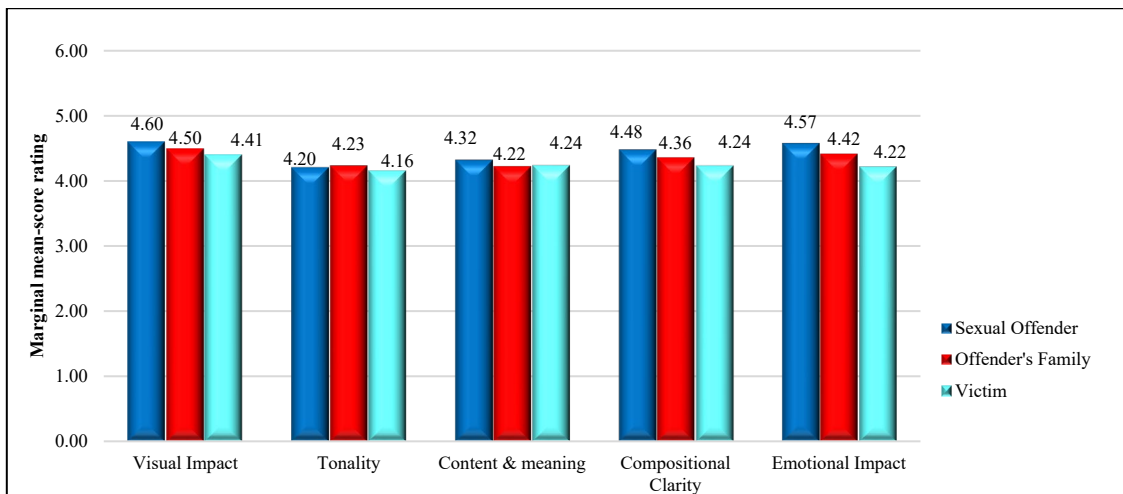


Figure 8: Marginal overall mean score ratings of digital paintings by themes

Paintings with sexual offender themes received better ratings than other subjects in 4 out of 5 criteria. Of the three subjects, Offender's family-themed digital paintings received the highest mean score ratings in tone and the lowest evaluations in substance and significance. Except for substance and meaning, victim-

related themes received the lowest score in the majority of categories (4 out of 5). The research also assessed the arousal levels of digital painting topics. Figure 9 provides a summary of the amount of arousal of digital painting subjects.

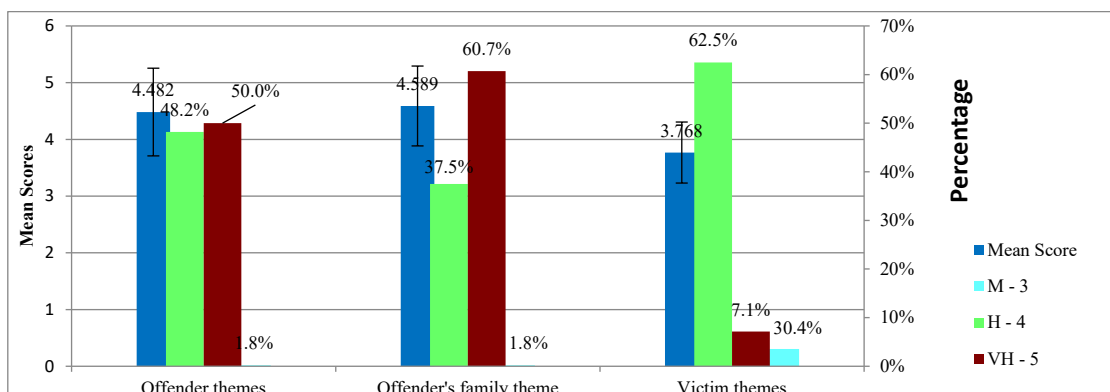


Figure 9: Summary of Responses on Arousal levels of Digital Painting Themes Frequency

The majority (50%) of sexual offenders found the themes about the impact of crime on the offender to be very triggering. None (0%) said that the themes were not exciting at all or had a low degree of arousal. The mean score of the arousal levels of the themes was 4.48 with a standard deviation of 0.54, indicating that the themes about the impacts of crime on the offender were of high arousal to sexual offenders. The majority of participants (60%) indicated very high arousal levels for themes about the impact of crime on the offender's family, with none reporting little or very low arousal. On average, respondents reported a high level of felt arousal for themes related to the repercussions of crime on offender relationships, as shown by a mean score of 4.59 and a standard deviation of 0.53. 62% of participants reported high arousal for themes depicting the repercussions of crime on

victims. None of the respondents reported having nil or very low arousal levels when it came to painting themes about the repercussions of crime on victims. The average score was 3.77, with a standard deviation of 0.57, indicating that the themes on the impact of crime on the victim were regarded to have high arousal levels.

Ratings for Digital Paintings by Exposure Frequency

The 24 artworks were evaluated based on their exposure frequency. Some six (6) digital artworks were only introduced during the rating session, while the remaining eighteen (18) were shown in fifteen exposures. Table 4 shows the differences in the evaluations of the artworks based on exposure frequency.

Table 4: Tests of Between-Subjects Exposure- Frequency Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	125206.012	1	125206.012	59004.264	.000
Stimulus Frequency	109.139	1	109.139	51.432	.000
Error	2856.188	1346	2.122		

The assessments of the 24 artworks varied considerably between the two exposure frequencies. The scores provided by the respondents were substantially impacted by the frequency of exposure, as shown by the F statistic with a p-value of 0.000, which is below the significance threshold of 0.05. Figure 10 displays a

graph that visually represents the significant difference in average scores of the different rating measures between the two exposure frequencies.

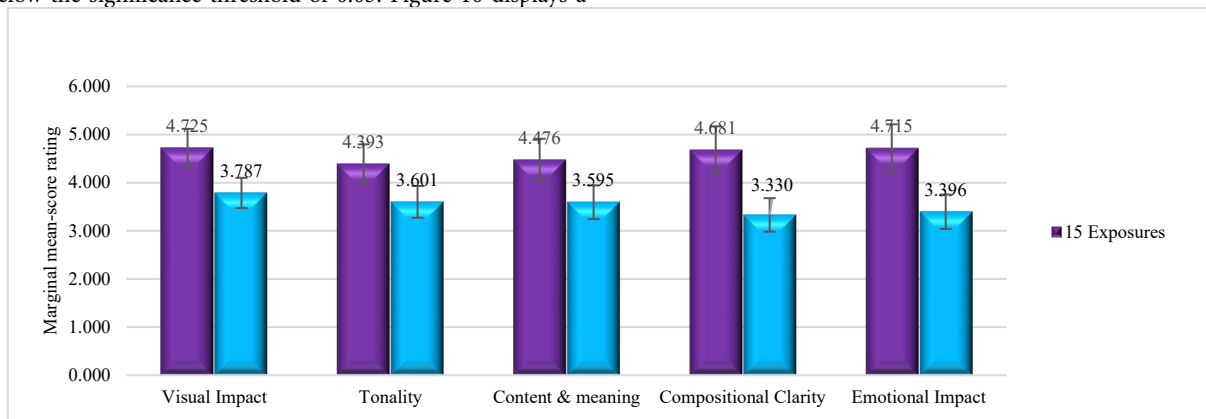


Figure 10: Estimated Marginal Mean Score Ratings of Paintings by Exposure Frequency

The digital paintings, regardless of exposure frequencies, were consistently judged as having the greatest visual impact relative to the other measured rating characteristics. Paintings that were presented more often in digital form received better ratings on all parameters compared to paintings that were shown just once during the rating phase.

Discussion of Findings

The researchers investigated the impact of repeated exposure on the evaluation of artistic quality in digital paintings among male sex offenders, using several metrics. Unlike simple statements of liking, judgements included assessments such as admiration or critiques of visual impact, tone, substance and meaning, compositional clarity, and emotional effect. Through repeated exposures, viewers developed the ability to focus on the paintings and discern more details. Through these encounters with the paintings, viewers' thoughts, perceptions, and attitudes towards the artwork may have been altered. Similar to Carbon (2017), this project used a temporary exhibition with a restricted number of artworks only focused on the ramifications of sexual offences. This study examined the explicit ratings of artworks to measure various aspects of aesthetic experience, including visual impact, tonality, content and meaning, compositional clarity, and emotional impact. These characteristics of the paintings were the main focus of the study. A strong correlation was found between the frequency of exposure and the positive evaluations of artworks. The correlation was stronger for artworks that were shown 15 times.

The paintings in the exhibition hall had an average mean viewing distance of 1.4 m, which is beyond the scope of the present research. Carbon (2017) and Locher et al. (2001) found a positive link between artwork size and viewing distance, which might be explained by their huge dimensions. In line with the results of a study by Bitgood, McKerchar and Dukes (2013), which found that larger artworks were effective in attracting and maintaining attention, the authors of this study assume that the digital paintings' large dimensions (H x W = 117.8 x 83.7 cm) may have captivated the audience. According to Seidel and Prinz (2018), there have been positive reviews of bigger art reproductions as well. The fact that most participants couldn't tear their eyes away from the paintings and thought the allotted viewing time was inadequate gave more evidence of this. People in this research spent more time with each picture because, similar to Smith and Smith (2001), they saw them in small groups of five to seven. Research on museum visitors' eye movements has shown

that people tend not to gaze at artworks for lengthy periods of time, with typical viewing durations falling somewhere between 27.2 and 39 seconds, which is considered suitable for the early and middle phases of processing (Smith, 2014; Brieber et al. 2014; Tröndle & Tschacher, 2012). In contrast to what Leder and Nadal (2014) said, this research discovered that in order to have more meaningful art experiences, longer durations of participation were necessary. Multiple cycles of feedback and feed-forward processes pertaining to perception and cognition were made possible by the prolonged extension time, which averaged 1.9 minutes per painting. This might be because of a few things: 1) most people found the paintings' subject matter—the repercussions of sexual crimes—to be confusing; 2) there were only 24 paintings on display, which is much lower than in traditional museum settings that house many artworks; and 3) nearly all of the participants (91.07 percent) lacked any kind of artistic training, making this the first study of its type in Nairobi West Prison and the bigger Kenya Prisons.

Research has shown that group art interventions may activate both the cognitive (spoken) and emotional (visual) pathways of communication (Shenaar-Golan & Walter, 2018). The present research was further enhanced by group viewing, which piqued participants' interest in the digital artworks and allowed for more in-depth discussion afterwards. Participants in RSVP, in contrast to those in a laboratory setting, had their viewing distance fixed. Because of how quickly the presentation and rating were done, there was little time for discussion, thus they were tested individually. A more comprehensive perspective of the reactions of participants to digital paintings was provided by the paradigm of aesthetic evaluations and enjoyment (Leder et al., 2004). All participants followed the viewing procedures outlined by (Leder et al., 2004). In the next step, participants used perceptual analysis for low-level visual elements such form and colour, as well as colour schemes, style, themes, and exposure frequency, to evaluate the digital paintings based on the theoretical framework (Leder et al., 2004). At this point in the processing, art was evaluated based on criteria including emotional effect, compositional clarity, visual impact, tone, content, and significance. Analysing images relied on well-established empirical techniques that classify painting styles (Wallraven et al., 2009) or anticipate viewers' emotional reactions to artworks (Yanulevskaya et al., 2012, p.3).

Leder et.al (2004) claimed that a comprehensive comprehension of the style and context of an artwork is crucial for experiencing aesthetics. This supports Russell's (2003) perspective that the enjoyment of art viewing stems from the capacity to

comprehend the artist's message and goals. Prior research (Swami, 2013; Locher et.al, 2015) has shown that presenting details about the style, setting, and emotional impact of digital paintings during focus group discussions greatly enhances participants' comprehension and admiration of the artwork. As a result, Surrealist and polychrome paintings received more favourable judgements than realism and monochrome paintings, respectively. The use of colour in paintings serves as a significant attention-grabbing tool, attracting viewers to further explore and examine the artwork (Bruder & Ucok, 2000). This might partly account for the elevated liking and ratings bestowed to polychrome artworks. Berylyn (1970) reported that individuals developed a greater preference for surrealism paintings, which were more intricate than realist paintings, after repeated exposure. The surrealist painting style achieved the highest score across all the parameters, with 83.9% of the participants expressing a very strong liking for it. The findings indicate that 78.6% of the respondents had a strong preference for polychrome paintings, which were ranked the highest in all art metrics compared to monochrome paintings. The strong preference for polychrome paintings, which are characterised by vibrant colours, aligns with the previous research conducted by Yanulevskaya et.al (2012). Their study on emotional responses to paintings found a favourable association between bright colours and good feelings.

The research aimed to improve comprehension of digital artworks by promoting enthusiasm towards their content. Previous research has related an artwork's emotional effect to processing efficiency (Graf & Landweher, 2015; Leder, Gergon, Dressler & Schalmann, 2012). As a result, employing figural and representational forms, this research permitted greater processing efficiency, consistent with the results of Massandrea, Barloli, and Carcus (2011). According to Wikstrom (2011), emotions allow us to experientially connect the past and present while seeing a piece of art. This role was particularly significant for male sexual offenders who were suffering emotional uncertainty while in jail. While themes dealing with the repercussions of sexual crimes on the offender received the highest ratings across all metrics, paintings depicting the offender's family were deemed to be extremely stimulating by 60% of the participants. Whereas victim-related themes scored lowest in four of the five areas except for style, 62% of respondents found them extremely arousing. These results might be attributed to the fact that these two topics likely featured more pictures of child victims of ostracism, prejudice, poverty, and sexual assault. Although seen in a different context, Adler-Nissen, Andersen, and Hansen (2020) claimed that photographs of young victims might produce an iconic victim effect, invoking emotions and creating empathy.

This research confirmed Stang's (1974) findings that repeated exposure to a stimulus result in positive reinforcement. In all contexts of exposure, the research found that digital paintings exposed at greater frequencies had more favourable answers than six (6) paintings presented just once during the rating phase. This is consistent with Zanjonc's (1968, p.3) experimental findings, which showed that frequently exposed stimuli elicited greater preferences. Jakesch and Carbon (2012), who found that a stimulus must be shown several times to get full impression intensity, validated this result. Short training sessions were shown to provide greater exposure effects, as evidenced by Bornstein's (1989) meta-analysis of data, which revealed the largest effects with short exposures. Although other research have indicated lesser exposure effects for paintings, this study discovered greater effects and higher preference after a delay between the first and subsequent viewings, as proposed by Stang (1974) and Bornstein (1989). The delay intervals established between the displays of digital artworks were also observed to boost participants' expectations for upcoming sessions.

Although the influence of titles on artwork processing is not the focus of this research, brief titles put on digital paintings assisted participants in processing the artworks during the short viewing periods. This is consistent with Belke, Leder, Strobach, and Carbon's (2010) findings that titles aid in the processing of artworks, resulting in favourable appraisal and increased pleasure. Since the viewing periods were limited, the brief names supplied were regarded beneficial in identifying and categorising the picture content, as proposed by Leder et al. (2006).

Conclusion

The research results indicate that frequent viewing of a piece of art might improve the viewers' capacity to evaluate it efficiently. Nevertheless, it is necessary to limit the duration of the watching sessions in order to prevent the potential tedium that might result from over exposure. Our research indicates that exposure frequency significantly influences the appraisal of digital artworks. In order to get a deeper understanding of how viewers evaluate visual arts, future research should investigate other criteria for assessing art that were not addressed in the current study.

References

- Abodunrin, J. A. (2017). Taxonomy of Painting Styles in Contemporary Nigeria. *Africology: The Journal of Pan African Studies*, 10(3), 234-248.
- Adler-Nissen, R., Andersen, K.E & Hansen, L. (2020). Images, emotions, and international politics: the death of Alan Kurdi. *Review of International Studies*. Volume 46, Issue 1, pp. 75-95. <https://doi.org/10.1017/S0260210519000317>
- Baralaei, S. & Najmabadi, A. (2015). The Effect of Using Images on Vocabulary Learning on EFL Learners. *International Journal of Research on English Language Teaching Studies*, 3(2), 17-19.
- Bart, H. (2013). *The Influence of Colour and Scent on People's Mood and Cognitive Performance in Meeting Rooms*. Unpublished Master's Thesis, University of Twente, Enschede.
- Belke B., Leder H., & Carbon C. C. (2015). When Challenging Art Gets Liked: Evidences for a Dual Preference Formation Process for Fluent and Non-Fluent Portraits. *PLoS One*, 10, e0131796.
- Belke, Leder, Strobach & Carbon (2010). Cognitive Fluency: High-Level Processing Dynamics in Art Appreciation. *Psychology of Aesthetics Creativity and the Arts* 4(4):214-222.
- Berlyne, D. E. (1970). Novelty, complexity and hedonic value. *Perception and Psychophysics*, 8, 279-286.
- Bitgood S., McKerchar T. L., Dukes S. (2013). Looking back at Melton: gallery density and visitor attention. *Visit. Stud.* 16 217-225. <https://doi.org/10.1080/10645578.2013.827024>
- Bornstein, R. F. (1989). Exposure and Affect: Overview and Meta-Analysis of Research, 1968-1987. *Psychological Bulletin*, 106(2), 265-289.
- Brieber, D., Nadal, M., Leder, H., & Rosenberg, R. (2014). Art in Time and Space: Context Modulates the Relation Between Art Experience and Viewing Time. *PLoS One* 9, e99019.
- Brown, S. A., & Novak-Leonard, J. L. (2011). *Getting in on the Act: How Groups are Creating Opportunities for Active Participation*. Wolf Brown: James Irvine Foundation.
- Bruder. K.A. & Ucok, O. (2000). Interactive Art Interpretation: How Viewers Make Sense of Paintings in Conversation. *Symbolic Interaction*, Volume 23, Number 4, pages 337-358.

- Carbon, C. (2107). Art Perception in the Museum: How We Spend Time and Space in Art Exhibitions. I-Perception. January-February 2017, 1–15. <https://doi.org/10.1177/2041669517694184>
- Creswell, J.W., (2014). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches - 4th ed. SAGE Publications, Inc. 2455 Teller Road Thousand Oaks, California.
- Dube, S. R., Anda, R. F., Whitfield, C. L., Brown, D. W., Felitti, V. J., Doug, M., & Giles, W. H. (2005). Long-Term Consequences of Childhood Sexual Abuse by Gender of Victim. *American Journal of Preventive Medicine*, 28(5), 430-438.
- Gerger, G. & Leder, H., (2015). Titles change the esthetic appreciations of paintings. *Frontiers in Human Neuroscience* 9(464).
- Gill, M., & Tutty, L. (1999). Male Survivors of Childhood Sexual Abuse: A Qualitative Study and Issues for Clinical Consideration. *Journal of Child Sexual Abuse*, 7, 19-33.
- Graf, L. K., and Landwehr, J. R. (2015). A dual-process perspective on fluency-based aesthetics: the pleasure-interest model of aesthetic liking. *Pers. Soc. Psychol. Rev.* 19, 395–410. <https://doi.org/10.1177/1088868315574978>
- Helguera, P. (2011). Education for Socially Engaged Art: A Materials and Techniques Handbook. New York: Jorge Pinto Books Inc. <http://arts.gov/sites/default/files/Research-Art-Works-Oregon-rev.pdf>.
- Huston, A.J. & Huston, J.P. (2015). Aesthetic Evaluation of Art: A Formal Approach. Oxford Scholarship Online. <https://doi.org/10.1093/acprof:oso/9780199670000.003.0024>
- Jakesch, M., & Carbon, C. C., (2012). The Mere Exposure Effect in the Domain of Haptics. *PLoS One*, 7(2). <https://doi.org/10.1371/journal.pone.0031215>
- Jasna, M. (2018). Symmetry Perception for Patterns Defined by Color and Luminance. *Journal of Vision*, 18(4), 1-24.
- Jørgensen, C., (1998). Attributes of images in describing tasks. *Information Processing & Management* 34 (2/3): 161–74.
- Kirchberg, V., & Tröndle, M. (2012). *Experiencing Exhibitions: A Review of Studies on Visitor Experiences in Museums*. *Curator: The Museum Journal*, 55(4), 435–452. <https://doi.org/10.1111/j.2151-6952.2012.00167.x>
- Leder, H., & Nadal, M. (2014). Ten years of a model of aesthetic appreciation and aesthetic judgments: The aesthetic episode – Developments and challenges in empirical aesthetics. *British Journal of Psychology*, 105(4), 443–464. <http://doi.org/10.1111/bjop.12084>
- Leder H., Belke B., Oeberst A., Augustin D., (2004). A Model of Aesthetic Appreciation and Aesthetic Judgments. *Br. J. Psychol.* 95, 489–508.
- Leder H, Carbon C-C, Ripsas A-L (2006) Entitling art: Influence of title information on understanding and appreciation of paintings. *Acta Psychol* 121: 176–198 <https://doi.org/10.1016/j.actpsy.2005.08.005>
- Leder, H., Gerger, G., Dressler, S., & Schabmann, A. (2012). How art is appreciated. *Psychology of Aesthetics, Creativity, and the Arts*, 6(1), 2-10. <https://doi.org/10.1037/a0026396>
- Levenson, J. & Tewksbury, R., (2009). Collateral Damage: Family Members of Registered Sex Offenders. *American Journal of Criminal Justice*, 1-17.
- Locher, P. (2012) Empirical Investigation of an Aesthetic Experience with Art. <https://doi.org/10.1093/acprof:oso/9780199732142.003.00>
- Locher, P. J., Smith, J. K., & Smith, L. F. (2001). The influence of presentation format and viewer training in the visual arts on the perception of pictorial and aesthetic qualities of paintings. *Perception*, 30, 449 – 465.
- Locher P., Krupinski, E. A., Mello-Thoms C., Nodine C. F., (2007). Visual interest in pictorial art during an aesthetic experience. *Spat. Vis.* 21, 55–77. <https://doi.org/10.1163/156856807782753868>
- Locher, P., Krupinski, E., & Schaefer, A. (2015). Art and authenticity: Behavioral and eye-movement analyses. *Psychology of Aesthetics, Creativity, and the Arts*, 9(4), 356–367. <https://doi.org/10.1037/aca0000026>
- Locher, P. (2003). An empirical investigation of the visual rightness theory of picture perception. *Acta Psychologica*, 114, 147-164.
- Locher, P. (2015). The Aesthetic Experience with Visual Art "at First Glance." In P. Bundgaard & F. Stjernfeld (Eds.), *Investigations into The Phenomenology and the Ontology of the Work of Art: What are Artworks and how do we Experience them* (Pp. 75-88). New York: Ny. Springer Open.
- Muth, C., & Carbon, C. C. (2013). The Aesthetic Aha: On the Pleasure of Having Insights into Gestalt. *Acta Psychologica*, 144, 25–30.
- Panke, T. (2016). Photography Visual Communication: Direct and Indirect Impact on Human Communities. *Scholarly Research Journal for Humanity Science and English Language*, 3(18), 4132-37.
- Pelowski, M., Gerger, G., Chetouani, Y., Markey, P. S., & Leder, H. (2017). But is it really Art? The Classification of Images as “Art”/ “Not Art” and Correlation with Appraisal and Viewer Interpersonal Differences. *Front Psychol.*, 8, 1729.
- Robbers, M.L.P (2009). Lifers on the outside. Sex offenders and Disintegrative Shaming. *International Journal of Offender Therapy and Comparative Criminology*, 53, 5-28.
- Russell P.A. (2003). Effort after meaning and the hedonic value of paintings. *Br J Psychol.* 9 4(Pt 1):99–110.
- Seidel A., Prinz J. (2018). Great works: a reciprocal relationship between spatial magnitudes and aesthetic judgment. *Psychol. Aesthet. Creat. Arts* 12 2–10. <https://doi.org/10.1037/aca0000100>
- Shenaar-Golan, V & Walter, O. (2018) Art Intervention in Group Settings: A Course Model for Social Work Students, *Social Work with Groups*, 41:1-2, 89-102, <https://doi.org/10.1080/01609513.2016.1258622>
- Smith, J. K. (2014). The museum effect: How museums, libraries, and cultural institutions educate and civilize society. Lanham, MD: Rowman & Littlefield
- Smith, L.F., Smith, J.K., & Tinio, P.P.L., (2017). Time Spent Viewing Art and Reading Labels. *Psychology of Aesthetics: Creativity and the Arts*.
- Swami, V. (2013). Context Matters: Investigating the Impact of Contextual Information on Aesthetic Appreciation of Paintings by Max Ernst and Pablo Picasso. *Psychology of Aesthetics Creativity and the Arts* 7(3):285. <https://doi.org/10.1037/a0030965>
- Stang, D. J. (1974). Intuition as Artifact in Mere Exposure Studies. *Journal of Personality and Social Psychology*, 30, 647-653.
- Tans, E.S. (2000). Emotion, Art and The Humanities. In M. Lewis and J. M. Haviland-Jones (Eds.), *Handbook of Emotions* (2nd Ed) (116-136). New York: Guilford Press.
- Tavaragi, M. S., & Sushma, C. (2016). Colors and Its Significance. *The International Journal of Indian Psychology*, 3(2), 116-131.

- The Hindu, (2013). Delhi Gangrape: All four accused sentenced to death. Retrived from <http://www.thehindu.com/news/national/delhigangrape-all-four-accused-sentenced-to-death/article5123772.ece>
- Tröndle, M., & Tschacher, W. (2012). The Physiology of Phenomenology: The Effects of Artworks. *Empirical Studies of the Arts*, 30(1), 79-117.
- Wallraven, C., Fleming, R., Cunningham, D., Rigau, J., Feixas, M., and Sbert, M. (2009). Categorizing art: comparing humans and computers. *Comput. Graph.* 33, 484-495. <https://doi.org/10.1016/j.cag.2009.04.003>
- Wikström, B. (2011). The Dynamics of Visual Art Dialogues: Experiences to Be Used in Hospital Settings with Visual Art Enrichment. *Nursing Research and Practice*, 2011, Article ID 204594. <https://doi.org/10.1155/2011/204594>
- Yanulevskaya, V., Uijlings, J., Bruni, E., Sartori, A., Zamboni, E., & Bacci, F. (2012). *In the Eye of the Beholder: Employing Statistical Analysis and Eye Tracking for Analyzing Abstract Paintings Categories and Subject Descriptors*. New York: ACM Multimedia, Nara.
- Zajonc, R.B., Shaver, P., Tavis, C., and Van Kreveld, D. (1972). Exposure satiation, and stimulus discriminability. *Journal of Personality and Social Psychology*, 21, 270-280.
- Zajonc, R. B., (1968). Attitudinal Effects of Mere Exposure. *Journal of Personality and Social Psychology*, 9(2, Pt.2), 1-27.

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