

THE EMOTIONAL RESONANCE OF TENEBRISM: A STUDY OF CARAVAGGIO'S PSYCHOLOGICAL REALISM AND ITS IMPACT ON VIEWERS

Namira Salam Asmi

Department of Art History, Faculty of Fine Arts, University of Dhaka Bangladesh

namiraq3@gmail.com

ABSTRACT

Caravaggio's use of chiaroscuro, tenebrism, and color can evoke a variety of emotions in viewers. This study explores emotional responses through an analysis of his two paintings: Judith Beheading Holofernes (c. 1598–1602) and Narcissus (c. 1597–1599). An online survey using Google Forms was conducted with 64 participants, all of whom were students from the Faculty of Fine Arts at the University of Dhaka, aged between 18 and 25. The findings reveal that the paintings mostly evoked a range of negative emotions among participants. The results show that, for Judith Beheading Holofernes, 29.8% of respondents reported fear as the dominant emotion; 61.7% associated the painting with the color red. For Narcissus, 55.3% identified sadness as the primary emotion; 51.1% reported black as the dominant color. The study is limited by its relatively small sample size. In conclusion, light, shadow, and color in art can trigger different reactions in people; their use in art can be used to study potential connections between visual elements and their therapeutic or psychological significance.

Keywords: art, Caravaggio, Chiaroscuro, color, tenebrism

INTRODUCTION

Caravaggio's techniques transform the still images into immersive experiences for the spectator. The use of tenebrism shatters the boundary between pictorial space and lived reality and draws viewers directly into the scene. Manipulation of light and shadow also fosters instinctive, bodily empathy. Such as sharply lit muscles, wounds, and gestures can force viewers to tense alongside *Holofernes* or to feel awestruck with *Narcissus*. At the same time, Caravaggio's use of chiaroscuro increases the psychological and spiritual dimension of his figures. The paintings highlight anguished expressions while plunging the characters' surroundings into oblivion, reflecting betrayal, suffering, or divine presence. His figures often emerge from darkness with a godly presence. Through this interplay of light and darkness, Caravaggio's art activates the senses, stirs empathy, and forges a powerful connection between the painted scene and the viewer. (O'Brien, 2020)

Despite the extensive art-historical research on Caravaggio's usage of chiaroscuro and tenebrism, less attention has been given to specific visual features like color and facial expression that affect the contemporary viewers' emotions. This study addresses that gap

through a self-conducted survey, examining emotional responses to two of Caravaggio's works: *Judith Beheading Holofernes* and *Narcissus*.

Accordingly, this research investigates:

- a. RQ1: Which colors are most prominent in the selected artworks?
- b. RQ2: How do viewers interpret the facial expressions of the characters?
- c. RQ3: How does Caravaggio's use of chiaroscuro and tenebrism influence the emotional perception of the viewer?

In paintings, the manipulation of light and shadow is essential not only to visibility but also to the expressive power of the image. Light highlights texture, enhances colors, and directs the viewer's attention to specific details. It shapes the narrative beyond simple representation. Shadows, on the other hand, provide structure and depth, carve form and create atmosphere. Together, light and shadow establish perspective, emotional resonance, and how a work is perceived. Light can illuminate significance, while shadow introduces tension, mystery, or solemnity. For many artists, this dynamic is a means of emotional communication. The relation between light and shadow can guide viewers to move beyond observation into a shared experiential journey (Lan, 2024). In the context of drawing and painting, they gain objective autonomy and become the primary emphasis (Michele et al.n.d.). Ultimately, light and shadow in art function as more than compositional tools; they act as vehicles of meaning, capable of intensifying drama, evoking emotion, and revealing the deeper essence of both subject and artist (Lan, 2024).

Chiaroscuro and Tenebrism

Chiaroscuro is the treatment and use of light and dark, especially the gradations of light that produce the effect of modeling (Kleiner, 2019). When this technique is pushed to an extreme, it becomes *tenebrism*, characterized by stark illumination set against deep, enveloping darkness. Unlike chiaroscuro, which relies on gradual tonal transitions, tenebrism employs bold contrasts that heighten drama, isolate figures, and intensify psychological effect. This reliance on a single, often unnatural light source transforms shadow into a dominant compositional element. As such, chiaroscuro and tenebrism not only model form but also act as expressive tools, capable of evoking a variety of emotions in the viewer (Xu, 2020).

Color-Emotion Link

Research has consistently revealed that color is not only a visual property but also a powerful psychological stimulus that influences human emotions and perceptions. Colors are defined by their hue, brightness, and saturation, each of which plays a role in shaping affective responses. Bright colors are generally linked with positive feelings such as hope, cheerfulness, and energy, whereas darker tones are often tied to sadness, fear, or melancholy. Specific colors also carry distinct emotional associations: red with love, passion, anger, and aggression; blue with calmness, trust, and sadness; yellow with optimism and joy; green with peace and renewal; purple with dignity, nostalgia, or sadness; black with fear, power, and mourning; and white with purity, simplicity, and innocence. Importantly, these associations are not universal but are shaped by cultural, social, and personal contexts. For example, purple is regarded as a symbol of luxury in many Asian cultures but is often associated with inexpensive products in the United States. Similarly, red is strongly linked with luck and marriage in Chinese culture but with passion or danger in Western contexts. Despite such variations, the broader consensus is that color serves as a fundamental channel for communicating and

evoking emotion (Demir, 2020). This theoretical foundation is particularly relevant when examining Caravaggio's paintings, where the deliberate use of deep blacks and stark reds corresponds closely with the emotions of sadness and fear identified in the current study's survey findings, demonstrating how color operates as a psychological code in both art and human experience.

Innovation of Caravaggio

Michelangelo Merisi da Caravaggio (29 September 1571 – 18 July 1610), known simply as Caravaggio, was an Italian painter and leading figure of the Baroque era who mastered chiaroscuro and developed tenebrism. Through the sharp interplay of light and darkness, his paintings revealed both human fragility and divine presence, which resulted in the union of the earthly and the transcendent within a single visual space (Lan, 2024).

The roots of Caravaggio's tenebrism can be traced back to Renaissance explorations of light and shadow, particularly Leonardo da Vinci's development of *chiaroscuro*. Leonardo distinguished between *ombra* (shadow) and *tenebra* (total darkness), though he cautioned against overly strong contrasts. Building on this foundation, Lomazzo's *Treatise* (1584) introduced the concept of *lume divino*, a sacred, metaphysical light contrasted against surrounding darkness, which became a structural principle in religious art. Caravaggio radicalized these earlier theories by employing a single light source against entirely dark backgrounds. This produced heightened drama and a sacred intensity. Unlike his contemporaries, such as Carracci, who favored diffuse natural light and colorful palettes, Caravaggio embraced exaggerated contrasts that were not strictly "natural" but still grounded in the principles of illumination. His tenebrism not only aligned with the Counter-Reformation demand for emotionally charged sacred imagery but also expressed a distinctive form of naturalism that transformed chiaroscuro into a more extreme and psychologically potent visual language. (Xu, 2020)

METHOD

The study examined two paintings by Caravaggio: *Judith Beheading Holofernes* – Case 1, and *Narcissus* – Case 2. Digital reproductions of these works were sourced from publicly available Wikimedia Commons. Images were accessed in full resolution (72 dpi) and displayed on participants' digital devices under a standard neutral white background. The images were employed strictly for academic and educational purposes.



Figure 1: Judith Beheading Holofernes (Caravaggio, 1599)



Figure 2: Narcissus (Caravaggio, 1597–1599)

Participants

A total of 64 participants (aged 18–25 years; 42 females, 22 males) were participants from the Faculty of Fine Arts, University of Dhaka. Recruitment was conducted via convenience sampling through departmental online groups. Inclusion criteria required participants to be students of the Faculty of Fine Arts, with no formal exclusion criteria beyond age and institutional affiliation.

Ethical Consideration

Participation was anonymous and voluntary, with the option to withdraw at any time. Data were collected solely for academic purposes, stored securely, and used only for research purposes. As the study involved minimal risk and anonymous self-reports, it was exempt from formal institutional review board (IRB) approval.

Survey Instrument

Data were collected via an online questionnaire (Google Forms). The survey consisted of nine questions, presented in simple language to ensure clarity. Questions were in multiple-choice formats. The exact survey items were:

1. Which color is the most eye-catching in *Judith Beheading Holofernes* (Case 1)? (Multiple choice: red, black, yellow, white, other)
2. What do you think about the expression on the face of the old woman (right) in Case 1? (Multiple choice: anger, disgust, fear, sadness, happiness)
3. What do you think about the expression on the face of the young woman (center) in Case 1? (Multiple choice: anger, disgust, surprise, happiness, sadness)
4. What do you think about the expression on the face of the man (left) in Case 1? (Multiple choice: fear, disgust, surprise, happiness, sadness)
5. How do you feel when you see the elements of Case 1? (Multiple choice: fear, disgust, anger, sadness, surprise, other)
6. Which color is the most visible in *Narcissus* (Case 2)? (Multiple choice: black, white, yellow, blue, other)
7. What do you think about the expression on the boy's face in Case 2? (Multiple choice: fear, surprise, happiness, sadness)
8. What do you think about the reflection of the boy's face in the water in Case 2? (Multiple choice: fear, surprise, happiness, sadness)
9. How do you feel when you see Case 2? (Multiple choice: sadness, surprise, fear, happiness, other)

Procedure

The survey was distributed online and completed individually. Images were presented sequentially in their entirety, without cropping or alteration. Respondents were instructed to view each image at their own pace, under normal screen brightness and resolution, before answering the associated questions. To minimize confounds, no time limit or group discussion was permitted during participation.

Data Analysis

Responses were analyzed descriptively. Frequencies and percentages were calculated for categorical responses (e.g., color associations, emotional reactions). Due to the exploratory nature of the study, no inferential statistics were pre-registered or conducted.

RESULTS AND DISCUSSION

Color Associations

Across participants, red was identified as the dominant color in *Judith Beheading Holofernes*, while black was most frequently associated with *Narcissus*.

Table 1. Color choices by participants for each painting

Painting / Case	Most chosen color (%)	Other colors (%)
Judith Beheading Holofernes (Case 1)	Red (61.7)	White (19.1), Black (10.6), Orange (8.5)
Narcissus (Case 2)	Black (51.1)	White (44.7), Green (4.2)

Character Expressions in *Judith Beheading Holofernes*

Participants most frequently described Holofernes' expression as *surprise*, Judith's as *disgust*, and the maidservants' as *anger*.

Table 2. Reported emotions for each character (Case 1)

Character	Most frequent response (%)	Other responses (%)
Holofernes	Surprise (53.2)	Fear (42.6), Sadness (3.2), Disgust (1)
Judith	Disgust (59.6)	Fear (34), Anger (6.4)
Maidservant	Anger (74.5)	Disgust (19.8), Fear (4.5), Sadness (1.1)

Character Expressions in *Narcissus*

Sadness was the most reported emotion for both the figure of Narcissus and his reflection.

Table 3. Reported emotions for the main figure and reflection (Case 2)

Figure	Most frequent response (%)	Other responses (%)
Narcissus (main face)	Sadness (55.3)	Surprise (42.6), Happiness (2.1), Fear (0)
Reflection (in water)	Sadness (51.1)	Surprise (31.9), Fear (14.9), Happiness (2.1)

Overall Emotional Responses

Fear was the leading emotional response to *Judith Beheading Holofernes*, while sadness dominated responses to *Narcissus*.

Table 4. Most frequently selected overall emotion per painting

Painting / Case	Most frequent emotion (%)	Other responses (%)
<i>Judith Beheading Holofernes</i> (Case 1)	Fear (29.8)	Sadness (27.7), Surprise (23.4), Disgust (19.1)
<i>Narcissus</i> (Case 2)	Sadness (51.1)	Surprise (23.4), Fear (10.6), Other (14.9)

Expressions and Viewer Interpretation

Survey participants interpreted expressions in both paintings mainly through *negative* emotions—fear, disgust, anger, and sadness. This supports Tolstoy's claim that art communicates and transfers emotion across individuals (Tolstoy, 2023). However, it is notable that viewers often imposed emotions inconsistent with traditional textual readings of the works. Such as, Narcissus was mythically portrayed as captivated by his beauty, yet viewers primarily perceived sadness. This difference highlights the role of chiaroscuro and tenebrism in shaping subjective interpretation, suggesting that Caravaggio's manipulation of light and shadow may have overridden narrative context in the viewer's consciousness.

Psychological Implications of Color–Emotion Links

The findings contribute to the broader discourse on the psychological impact of color. Consistent with prior studies, deep and saturated tones (e.g., red) were linked to sexuality and fear, while darker hues (e.g., black) were tied to disgust and death (Tham et al., 2020). These findings on color–emotion associations provide a critical framework for interpreting Caravaggio's color palette in his paintings. In *Narcissus*, the overwhelming presence of black dominates the canvas, visually enveloping the figure in darkness. According to psychological

research, black is strongly tied to death, sadness, melancholy, and isolation, which aligns with the emotional weight of the myth and amplifies the painting's tragic resonance. On the other hand, in *Judith Beheading Holofernes*, the prominence of deep reds serves as an immediate visual trigger for heightened emotions such as fear, violence, and intensity. Studies consistently associate red with passion and aggression, but also with danger and threat, making it an especially potent choice for representing the brutality of Judith's act and Holofernes's blood. In both works, Caravaggio employs color not as a decorative element but as a psychological device.

Reproduction versus Gallery Viewing

A key limitation lies in the study's reliance on digital reproductions viewed on personal devices. The luminance, scale, and texture of the original canvases, which measure over one meter in size, cannot be fully captured in reproduction. Previous research indicates that viewing conditions significantly alter emotional and aesthetic judgments (Galvez-Fernandez et al., 2022). Consequently, responses reported here may differ from those elicited in a museum setting, where factors such as ambient light, spatial immersion, and physical proximity could intensify or alter the emotional reactions of the viewer.

Limitations

The study's limitations must be acknowledged. First, the sample was relatively small (N = 64) and homogeneous, consisting solely of students aged 18–25 from a Fine Arts background. The survey also relied primarily on multiple-choice questions, which may have constrained participants' ability to express more nuanced or overlapping emotional responses. Participants also viewed digital reproductions of the paintings on personal devices rather than experiencing the works in their original gallery settings. Factors such as image resolution, scale, and viewing environment may therefore have influenced responses, and results should be perceived with caution in light of these limitations.

CONCLUSION

This study examined participants consistently identified strong negative emotions in the characters, shaped by Caravaggio's use of chiaroscuro, tenebrism, and color in *Judith Beheading Holofernes* and *Narcissus*. Survey responses showed that red and black were the most salient colors, with fear as the dominating emotion in the former and sadness in the latter. The final results suggest that Caravaggio's choice of color palette operates not only as a visual device but also as an emotional trigger. Such insights may have relevance for therapeutic uses of art, particularly in color-based emotion regulation strategies. Future research is encouraged to include more diverse demographic groups, larger sample sizes, and ideally compare responses to reproductions with those obtained in gallery contexts. Additionally, controlled experimental designs could examine how lighting conditions, screen resolution, or display scale mediate emotional responses.

References

Caravaggio. (1597–1599). *Narcissus*. [https://commons.wikimedia.org/wiki/File:Narcissus-Caravaggio_\(1594-96\)_edited.jpg](https://commons.wikimedia.org/wiki/File:Narcissus-Caravaggio_(1594-96)_edited.jpg)

- Caravaggio. (1599). Judith Beheading Holofernes. https://commons.wikimedia.org/wiki/File:Judith_Beheading_Holofernes_-_Caravaggio.jpg
- Demir, Ü. (2020). Investigation of color-emotion associations of the university students. *Color Research & Application*, 45(5), 871–884.
- Gálvez-Fernández, C., Sánchez-Sáez, F., & Corradi, G. (2022). The impact of screen luminance and ambient light on emotional appraisal of digital art. *Psychology of Aesthetics, Creativity, and the Arts*. Advance online publication. <https://doi.org/10.1037/aca0000123>
- Kleiner, F. S. (2019). *Gardner's Art Through the Ages: A Global History* (16th ed.). Cengage.
- Lan, K. (2024). The Dance of Light and Shadow: Exploring the Transformative Power of Luminosity and Darkness in Painting. 3rd International Conference on Education, Language and Art (ICELA 2023),
- Michele, A., Michael, R., and Farheen, P. n.d. *The Unbearable Lightness of Beauty: Beauty as a Ladder in the Aesthetics of Nicolai Hartmann*. Washington, DC: The Catholic University of America. Retrieved (September 8, 2025)
- O'Brien, D. (2020). Caravaggio, Empathy and Christ. *The Heythrop Journal*, 61(3), 437–446.
- Tham, D. S. Y., Sowden, P. T., Grandison, A., Franklin, A., Lee, A. K. W., Ng, M., Park, J., Pang, W., & Zhao, J. (2020). A systematic investigation of conceptual color associations. *Journal of Experimental Psychology: General*, 149(7), 1311.
- Tolstoy, L. (2023). *What is art?* BoD-Books on Demand.
- Xu, H. (2020). Caravaggio and Tenebrism—Beauty of light and shadow in baroque paintings. *Journal of Arts and Humanities*, 9(6), 01–11.