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ARTICLE

The Enrichment of Visual Experience through Music: Exploring Art-Music Perception

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ABSTRACT

This study explores the interplay between visual art and classical music, focusing on the role of ekphrasis—the translation of visual art into musical form. Two types of art–music connections are investigated: ekphrastic connections, in which the music translates a single painting and retains its title, and related connections, in which the music is inspired by multiple paintings. Twenty-one adult participants without formal training in art or music engaged with three art–music pairs: two ekphrastic pairs—Kaulbach-Liszt (The Battle of the Huns) and Böcklin-Rachmaninoff (The Isle of the Dead)—and one related pair: Musgrave's Summer which draws on works by Johns, Monet, and Van Gogh. Participants were tested individually under two conditions: Unimodal (viewing the paintings alone) and Multimodal conditions (viewing paintings with accompanying music). The study examined how aesthetic impressions varied across these conditions, compared responses to ekphrastic versus related pairs, and analyzed how differences in musical duration influenced participants' preferred listening times. A key finding revealed that Enrichment—a phenomenon in which music enhanced the perception of visual art by revealing new meanings or details—was the most common response under Multimodal conditions. This effect was consistent across both ekphrastic and related pairings. These findings highlight the potential of cross-modal artistic experiences to enrich aesthetic perception and offer insights into optimizing the presentation of art-music stimuli for lay adult audiences.

Keywords: Aesthetic Experience; Art Integration; Ekphrastic Connections; Multimodal Perception; Music Perception; Visual Art Perception

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1. Introduction

A compartmentalized approach in the arts often emphasizes specialized programs in visual art and music, each with its own distinct focus [1,2]. In contrast, arts integration programs highlight multisensory experiences, showcasing the transformative potential of connecting artistic modalities [3–13]. As a music educator, the author has observed how integrating visual art into music education can enrich students' understanding by fostering connections between different artistic forms. At the same time, the author recognizes that multimodal activities can sometimes overwhelm learners, leading to a state of overload. These experiences highlight the complexity of balancing enrichment and overload in arts integration and underscore the need for careful consideration of the conditions that optimize unimodal and multimodal experiences.

This study investigates how viewing art with and without corresponding musical compositions influences the artistic experiences of adult participants without formal academic training in music or art. It aims to explore the interplay between enrichment and overload, offering insights into the nuances of multimodal engagement.

The following literature review focuses on two key topics:

(1) Arts autonomy versus art integration

(2) Ekphrastic connections between visual art and music scientific studies on multimodal art experiences

2. Literature Review

2.1. Arts Autonomy Versus Art Integration

The term 'arts autonomy' refers to the concept that each art modality operates independently, adhering to its own distinct rules and principles. For example, visual art conveys meaning solely through its visual elements [14–16], while music, defined as organized sound [2,17], relies on its sonic qualities. Philosophers such as Kant, Hegel, and Adorno emphasize the autonomy of visual arts, valuing their intrinsic visual qualities [18]. Similarly, scholars such as Hanslick, Tovey, Schopenhauer, Langer, and Scruton focus on music aesthetics centered on auditory elements, often critiquing the incorporation of non-musical associations [1,2,19,20].

The debate on musical autonomy reflects a tension between music as pure sound and its potential for representing non-auditory elements. Some scholars highlight this tension through ambivalent perspectives. For instance, Langer criticizes program music for imitating everyday sounds, such as 'the inevitable cuckoo' [20], yet acknowledges music's capacity to represent non-musical ideas.

Art integration has a long history, appearing in liturgical dramas, theatrical performances, opera, and ballet. In modern times, it is ubiquitous across genres such as film, television, music videos, internet programs, and musical theatre, all utilizing the interplay of visual and auditory elements [10,19,21]. Twentieth-century composers like Messiaen and Scriabin even incorporated visual elements into their scores [22,23]. Additionally, museums frequently use music to enhance visual exhibitions.

Bruhn wryly noted that Hanslick, a staunch advocate for music's autonomy, 'opposed the most successful contemporary compositions, particularly those by Berlioz, Wagner, Liszt, and Verdi' [19], all of whom incorporated non-musical elements into their works. While Bruhn's list is concise, history demonstrates that many composers have consistently integrated non-musical elements into their music. Furthermore, sensory engagement with art is rarely isolated, as different modalities interact and enhance one another [24,25].

2.2. Ekphrastic Connections Between Visual Art and Music

Historically, collaborations between visual artists and composers have significantly influenced the development of multimedia genres [19,21,26–28]. Renowned artists such as Kandinsky, Klee, Dalí, and O'Keeffe, along with composers like Messiaen [23,29], Liszt, and Rachmaninoff, have shaped two key developments: (1) visual artworks inspired by musical compositions and (2) musical compositions inspired by visual art. The latter category includes ekphrastic music.

'Ekphrasis' refers to the artistic practice of interpreting, describing, or responding to one art form using another. In this study, it specifically concerns music inspired by visual art, where composers translate the imagery, emotions, and ideas of a painting into a musical composition.

Bruhn (2001) distinguishes ekphrastic music from

the broader category of program music [19]. While both genres are 'illustrative' or 'representative,' as they involve instrumental music depicting non-musical sources, their sources of inspiration differ. Musical ekphrasis translates scenes created by another artist in a different medium, whereas program music illustrates scenes originating from the composer's imagination.

In this study, a unique distinction is made between ekphrasis, where music is composed directly in response to a specific painting and retains its title, and related intermedial music, where the composition responds to multiple paintings, carries a different title, and is connected through shared subject matter, mood, or historical resonance rather than through direct ekphrastic representation.

2.3. Scientific Studies on Multimodal Art Experiences

Scientific studies exploring participants' perceptions while engaging with visual art and music can be categorized into two groups: those based on the matching approach and those focusing on stimuli conditions. Studies based on the matching approach examine participants' agreement on which paintings correspond to specific musical excerpts based on perceived similarity [30–35]. For example, Cowles had participants listen to music while viewing colored reproductions of paintings [30]. Participants matched the mood of the music to the paintings: dynamic music was paired with images depicting movement, while less dynamic music was associated with simpler images. Other researchers had participants match musical selections inspired by Klee's paintings to the artwork they felt most closely aligned with the music [33,34]. Hasenfus et al. asked undergraduates without formal education in music or art to sort reproductions of Baroque [32], Neoclassical, and Romantic art, along with both music and paintings, based on perceived similarities. Elkoshi had participants match animal illustrations with animal-inspired classical music [31]. The responses were categorized into four groups: Compatible pairs (aligned with the intended research pairs), Incompatible pairs (deviating from the intended matches), Multiple pairs (where one musical piece was paired with several pictures), and Unmatched (where no suitable match was found).

Findings from studies using the matching approach often show agreement among individuals, including those with limited artistic backgrounds, in pairing specific visual stimuli with corresponding musical excerpts [31,32,35–37]. For instance, Wehner found that music majors successfully matched Klee's paintings with corresponding musical pieces [35]. Nevertheless, some studies revealed partial or incompatible matching [30,31]. For instance, Cowles observed partial agreement in matching certain pictures with musical selections [30], while Elkoshi found that although most responses linked animal-inspired music with corresponding imagery, some incompatible responses highlighted the subjectivity and complexity of multimodal matching [31].

Studies based on the condition approach explore how different sensory conditions—viewing paintings, listening to music, or engaging with both simultaneously—affect aesthetic experiences [10,32,34,35,38,39]. For example, Parrott had participants evaluate paintings by Miró, Hopper, and O'Keeffe alongside 'sad' and 'happy' music by Grieg and Tchaikovsky under three conditions: music alone, paintings alone, and a combination of both [38]. Fekete et al. investigated whether pairing Gustav Klimt's Beethoven Frieze with Beethoven's Symphony No. 9 (4th movement, 'Ode to Joy') would enhance aesthetic experience, increase well-being [10], and deepen understanding of the painting. They hypothesized that listening to the music while viewing the painting would improve comprehension, enhance pleasure, and boost indicators of subjective well-being.

Findings often underscore the advantages of multimodal experiences, suggesting that incorporating musical contexts into visual stimuli can enhance the visual aesthetic experience [31,35–42]. For example, Kalyuga et al. found that integrating auditory and visual channels enables the processing of more information than using a single channel alone [40]. Parrott demonstrated that multimodal conditions can enhance emotional states [38]. Actis-Grosso et al. observed that such conditions elicit stronger aesthetic pleasure [39], with classical music enriching the appreciation of figurative art. Fekete et al. found that participants in the multimodal group were less distracted than those in the painting-only group [10], indicating that music can enhance focus on visual art. Similarly, Elkoshi observed that animal-inspired music significantly enriched initial perceptions of animal illustrations [31], a phenomenon termed the 'Enrichment Effect.'

However, some researchers have identified potential drawbacks to multimodal art-music conditions, arguing that adding music to visual art may act as an unfavorable stimulus, diminishing the evaluation and emotional appreciation of visual art experiences [43,44]. For example, Makin observed that adding an additional sensory modality [44], such as sound, often transforms the experience of ekphrasis rather than merely enhancing it. Similarly, Loureiro et al. examined the impact of background music in both a virtual art gallery laboratory setting and a real-world art exhibition [41]. They found that while music aided in recalling artworks, it also distracted participants from emotionally engaging with and appreciating the beauty of the visual art, negatively affecting evaluations of arousal, valence, and liking.

Furthermore, research has emphasized the advantages of single-mode conditions, such as visual-only settings and music-only contexts [45–48]. For example, Packer and Bond found that silent museum environments provide restorative experiences [46], as reflection enhances visitors' well-being, satisfaction, and cognitive replenishment. Harrison and Clark suggested that engaging with visual art often leads to positive affective experiences [45].

Similarly, listening to music in isolation is associated with positive health and well-being outcomes, including heightened positive emotions, improved regulation of negative emotions, and reduced physiological and psychological stress [47,48]. Music shapes our subjective perception of time; for instance, enjoyable music can create the impression that time passes more quickly [47].

Contrasting findings in some studies using the matching and condition approaches may arise from differences in study objectives, experimental methodologies, participant backgrounds, and the artistic stimuli presented. The current research aligns with the condition approach and aims to further explore ekphrastic art-music connections under both single-mode and multimodal conditions.

3. Unique Aspects of This Study

3.1. The Materials Used

The visual-auditory pairs selected in this study are historically integrated and inherently connected through various levels of ekphrasis. The classical music pieces range in emotional and stylistic complexity. A unique distinction is made between *ekphrastic music*, where the music "translates" a specific painting and retains its title, and *related intermedial music*, where the music responds to multiple paintings and carries a different title.

3.2. Ecological Merits

The musical works range from approximately six to eighteen minutes in length, allowing participants to stop the music at any time before its conclusion. This creates an individual listening experience that mirrors personal listening behavior.

3.3. Uni-Modal and Multimodal Experiences

Participants in this study are tested under two conditions: first, by viewing the paintings alone, and second, in a multimodal condition where the paintings are paired with complex ekphrastic classical works. This design enables a comparison between the purely visual experience and the combined visual-musical experience.

4. Purpose

The general aim of this study is to determine whether multimodal experiences—where visual art is paired with ekphrastic music—enhance, diminish, or have no significant effect on participants' visual perception and aesthetic experiences. The study has three specific purposes:

(1) To evaluate participants' aesthetic experiences under unimodal conditions (viewing a painting alone) and multimodal conditions (viewing a painting with accompanying music).

(2) To investigate how multimodal aesthetic experiences differ when the accompanying music is ekphrastic as opposed to when it is related to several paintings through intermedial correspondence.

(3) To examine how the duration of the musical work influences participants' preferences for listening time.

5. Method

5.1. Participants

The study involved 21 adults (12 females, 9 males),

aged 30 to 78, with a mean age of 53.8 years. Participants came from diverse professional backgrounds, including education, psychology, and science, but none had formal academic education in music or art.

Sixteen participants had learned to play an instrument as children for 2–3 years, while nine reported being frequent concertgoers and museum visitors. Despite this exposure, participants were considered non-professionals, as none had formal academic training in music or visual arts.

An adult sample was intentionally selected to explore spontaneous aesthetic responses to art and music, free from the formal constraints often associated with academic training. By recruiting individuals without professional education in music or visual art, the study aimed to investigate how adults from diverse fields engage with multisensory artistic experiences. This approach emphasized their lived experiences, personal exposure, and intuitive interpretations rather than learned analytical frameworks. It aligns with the study's goal of understanding how art and music are perceived and integrated in artistic contexts by individuals without formal expertise.

5.2. Recruitment and Ethical Considerations

Participants were recruited through snowball sampling, beginning with third-party assistance—specifically, personal acquaintances and contacts of the author's colleagues and students—and continuing through chain-referral sampling via social media. Third-party recruiters were instructed to ask prospective participants to contact the researcher directly. Upon scheduling their participation, the participants were briefed on the study's main objective: to investigate their aesthetic experience under two conditions—viewing paintings with and without accompanying music.

Participants voluntarily took part in the study. They provided written informed consent and completed a brief questionnaire that gathered basic demographic information, including age, occupation, and their background in art and music. To ensure anonymity, pseudonyms are used in this report.

5.3. Procedure

Each participant attended three individual meetings, lasting approximately 40 to 50 minutes. During each meeting, the researcher presented one of three ekphrastic art-music pairs in a randomized order. Each session was divided into two parts:

(1) Viewing-only: Participants viewed a painting without auditory stimulus.

(2) Viewing-listening: Participants viewed the painting while listening to its corresponding ekphrastic music.

No information about the paintings or music was provided during the sessions.

5.4. Tasks and Data Collection

In the researcher's home studio, the paintings were displayed on a 49-inch monitor connected to a desktop computer (i3-12100 3.30 GHz) positioned directly in front of the participants. They were instructed: "Please view the painting and share your impressions and thoughts." Open-ended questions were asked, such as, "What do you see in the painting? What do you think about it?"

During the Viewing-listening section, music was played through headphones via YouTube recordings, while the painting was displayed on the monitor, with the image shown alongside the music. The paintings were part of the recordings and displayed throughout as the music played. A free listening paradigm was used, allowing participants to adjust the volume to their preference and "listen for as long as you wish." YouTube's automatic timer recorded the listening duration if participants stopped the music before it ended. Participants were instructed: "Please listen to the music while observing the painting and share your impressions and thoughts." Open-ended questions were asked, such as, "What do you think about the music? How does the music relate to the painting, if at all?"

All visual and auditory stimuli presented in this study were new to the participants, as confirmed by each of them.

Participants' verbal responses were recorded during both the viewing and viewing-listening phases to capture their impressions and thoughts. An audio recording device was used to ensure accurate documentation of their spontaneous reactions, providing an unfiltered account of their personal reflections on the paintings and accompanying music. The recordings were transcribed and subsequently translated into English.

5.5. Research Stimuli

(1) The research stimuli include three art-music pairs: Pairs 1 and 2 have ekphrastic connections, while Pair 3 has a related connection.

(2) Battle of the Huns

- o Painting: Battle of the Huns by Wilhelm von Kaulbach (1846)
- o Music: Battle of the Huns by Franz Liszt (1857)

(3) Isle of the Dead

- o Painting: Isle of the Dead by Arnold Böcklin (1884)
- o Music: Isle of the Dead by Sergei Rachmaninoff (1909)

(4) Summer (4th movement from The Seasons)

- o Music: Summer by Thea Musgrave (2012), inspired by three paintings:
  - Flag by Jasper Johns (1954–55)
  - Rue St-Denis, Festivities of June 30 by Claude Monet (1878)

The 4th of July in Paris by Vincent van Gogh (1886)

Figure 1 displays reproductions of the research paintings. Below are the durations and YouTube recordings for each piece of music:

- Liszt: Battle of the Huns (13:56)
  Budapest Symphony Orchestra
- Rachmaninoff: Isle of the Dead (18:42)
  Russian National Orchestra
- Musgrave: Summer (6:11)
  Scottish Symphony Orchestra

Kaulbach: *Battle of the Huns*

Böcklin: *Isle of the Dead*

Van Gough: *The 4th of July in Paris*

Jasper Johns: *Flag*

Claude Monet: *Rue St-Denis, Festivities of June 30*

Figure 1. Reproductions of the Research Paintings.

5.5.1. Kaulbach-Liszt: Battle of the Huns

Kaulbach's Battle of the Huns depicts the legendary Battle of the Catalonian Fields in 451 AD [49]. The painting captures the mythic image of fallen warriors continuing their struggle in the heavens. Positioned at the gates of Rome, it symbolizes the clash between Christian civilization, represented by the radiant cross, and the perceived barbarism of the Huns.

Liszt's symphonic poem Battle of the Huns mirrors the chaotic battle scenes depicted in Kaulbach's painting. Two contrasting motifs – an energetic "Battle Cry" and the serene "Crux Fidelis" melody – symbolize the Huns' barbarism versus Christian virtues, respectively [50]. The music opens with a somber tone that gradually erupts into the chaotic Battle Cry, followed by the peaceful Crux Fidelis played by the trombones amid the tumult. A tranquil section features the Crux *Fidelis* melody softly played by the organ, a symbol of the Christian church, juxtaposed with powerful orchestral interjections. The piece culminates in a triumphant finale, emblematic of the victory of faith over barbarism.

5.5.2. Böcklin-Rachmaninoff: Isle of the Dead

Böcklin's *Isle of the Dead* is a black-and-white painting depicting a desolate, rocky islet rising from dark waters, surrounded by steep burial cliffs and cypress trees, with a white-clad oarsman rowing a solitary boat carrying a coffin. Renowned for his allegorical explorations and classical mythological themes, Böcklin's portrayal of the oarsman is often interpreted as Charon, the mythological Greek boatman who ferries souls to the underworld, symbolizing the boundary between life and death.

Rachmaninoff's symphonic poem *Isle of the Dead* reflects the bleak atmosphere of Böcklin's painting, opening with a soft and mysterious tone. Repeated delicate up-and-down motifs in 5/8 quintuple time evoke the slow motion of river waves around the islet, gradually building to a climax before transitioning to a serene tranquillo section. Symbolizing Böcklin's funeral scene, Rachmaninoff weaves the *Dies Irae* plainchant throughout the composition—traditionally used in the Roman Rite Catholic Requiem Mass, or Funeral Mass. After a cathartic climax, the piece concludes gently with a reprise of the 5/8 rowing motif, offering a bleak yet serene closure.

5.5.3. Paintings by Johns, Monet, and Van Gogh Inspiring Musgrave's Summer

Jasper Johns' Flag portrays the iconic stars and stripes of the American flag. Monet's Rue St-Denis, Festivities of June 30, 1878 depicts the French crowds flooding the streets to commemorate the national celebration of the defeat of Napoleon III in 1870. Van Gogh's The 14th of July in Paris captures the festive atmosphere of Bastille Day in Paris. Like Monet's painting, Van Gogh's work reflects the French national celebration, with tricolor French flags—blue, white, and red—standing out against a backdrop of pedestrians on the street.

Musgrave's chamber piece Summer embodies American and French national festivities during the summer season by quoting the American and French national anthems—The Star-Spangled Banner and La Marseillaise. The melodic contour and harmonies of the anthems are deliberately distorted, adding a joyous character to the national summer celebrations. Several cuckoo calls at the end of the piece seem unrelated to the inspirational paintings, possibly suggesting a transition to a new season. Musgrave's work can be understood as an example of intermedial correspondence, in which the music is connected to several paintings through shared subject matter, mood, and historical resonance, rather than through direct ekphrastic representation.

5.6. Type of Study

A qualitative analysis was conducted to extract insights from participants' narratives. This process involved systematically examining and organizing their accounts to identify common themes and patterns in their interpretations of the visual and sonic stimuli. The themes were then grouped into coherent categories that reflect the main patterns emerging from the data. Each category was given a concise label to capture its essence. The study relies on participants' authentic responses, supported by direct quotes from their narratives [51–53].

6. Categories and Examples

6.1. Categories and Examples from Unimodal Narratives

Five categories emerged from the unimodal (viewing) narratives:

(1) Description: Describing visible features in the paintings.

(2) Example: Böcklin's Isle of the Dead: "I see caves in the rocks, a forest, and a figure on the water."

(3) Indeterminacy: Expressing uncertainty about the overall meaning of the paintings.

(4) Example: Monet's Rue St-Denis, Festivities of June 30: "I'm not sure what the picture shows. What are those colors?"

(5) Assumption: Proposing ideas that diverge from the intended meaning of the painters.

(6) Example: Böcklin's Isle of the Dead: "This painting seems to depict Noah's Ark, with the rain having ceased and new greenery emerging."

(7) Temporality: Perceiving temporality and motion in the paintings.

(8) Example: Van Gogh's The 14th of July in Paris: "The colors fall down from the sky."

(9) Affect: Expressing positive or negative personal emotions or preferences about the paintings.

(10) Example: Van Gogh's The 14th of July in Paris:

(a) Positive: "This amazing picture exudes vitality."

(b) Negative: "This picture holds little meaning for me because it lacks clarity."

6.2. Categories and Examples from the Multimodal Narratives

Six categories emerged from the multimodal (viewing-listening) narratives:

(1) Description: Describing sound events in the musical piece.

(2) Example: Musgrave's Summer: "I hear the Marseillaise anthem."

(3) Indeterminacy: Expressing uncertainty about the music.

(4) Example: Liszt's Battle of the Huns: "I'm confused—why did the music suddenly calm down? It doesn't sound warlike."

(5) Analogy: Expressing analogies between visual and auditory elements.

(6) Example: Liszt's Battle of the Huns: "The brass sounds energetic, reflecting the violent battle in the painting."

(7) Enrichment: Gaining new insights into the paintings, which were not mentioned during the unimodal phase, influenced by the musical compositions.

Example: Rachmaninoff's Isle of the Dead: "The music makes me notice waves in the river and clouds in the sky, which I hadn't noticed before in the painting."

(8) Temporality: Perceiving shifts and changes in musical parameters.

(9) Example: Liszt's Battle of the Huns: "The music shifts between frantic and calm sections, reflecting unpredictability."

(10) Affect: Expressing positive or negative personal emotions or preferences about the musical works.

(11) Example:

(a) Positive: Musgrave's Summer: "I enjoyed the lively, joyful music."

(b) Negative: Rachmaninoff's Isle of the Dead: "The music feels overly long and hard to follow. It seems disorganized, and I kept waiting for a clear focus, which never came."

7. Results

To evaluate aesthetic experiences under unimodal and multimodal conditions, the response frequencies for each category were recorded.

Figure 2 presents the distribution of these frequencies across categories for both conditions.

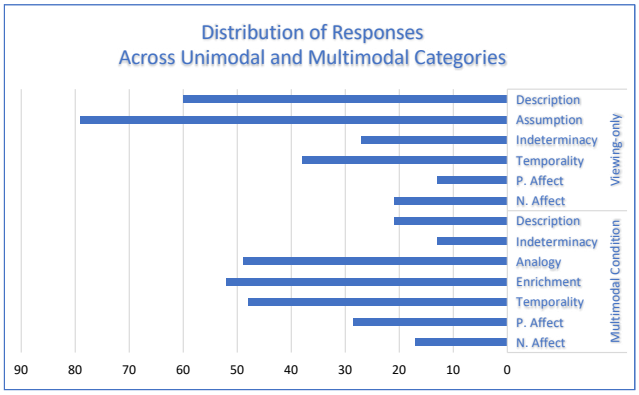

Figure 2. Frequencies Across Categories for Unimodal and Multimodal Conditions (P: Positive; N: Negative).

7.1. Unimodal and Multimodal Conditions

Figure 2 illustrates that the Assumption category (79%) was the most prevalent in the unimodal condition, while Description (60%), Temporality (38%), and Indeterminacy (27%) were less common. Affect was the least frequent, with negative affect (21%) surpassing positive affect (13%).

In the multimodal condition, the Enrichment category (52%) was the most prevalent. Analogy (49%) and Temporality (48%) were somewhat less common, while Description (23%) and Indeterminacy (13%) were rarer. Affect occurred relatively infrequently, with positive affect (28.5%) surpassing negative affect (17%).

Descriptions of paintings in the unimodal condition were more prevalent than descriptions of music in the multimodal condition (60% vs. 23%).

Indeterminacy was more common in the unimodal condition when describing the paintings (27%) compared to indeterminacy in the multimodal condition when describing the music (13%).

Temporality responses were more prevalent in the multimodal condition when describing music (48%) compared to temporality responses in the unimodal phase when describing paintings (38%).

7.2. Art-Music Pairs: Ekphrastic and Related Intermedial Music

To examine multimodal aesthetic experiences in the context of three art-music pairs: two ekphrastic pairs (Böcklin-Rachmaninoff, Kaulbach-Liszt) versus one related pair (Johns/Monet/Van Gogh-Musgrave), the frequencies of responses for each pair were recorded. **Figure 3** displays the distribution of these frequencies for each pair.

Figure 3. Distribution of Frequencies for Art-Music Pairs.

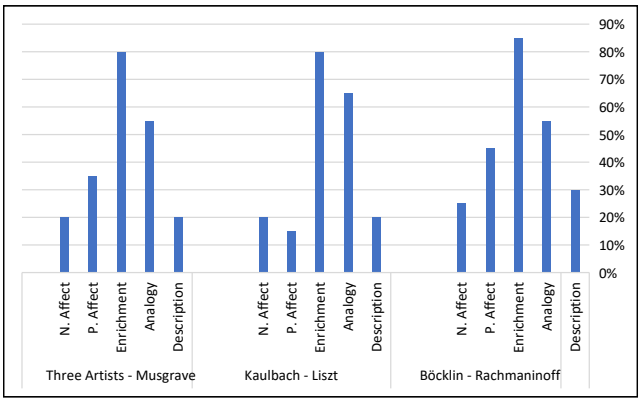

Figure 3. demonstrates that Enrichment was the most frequent response in all three pairs, slightly higher in the Böcklin-Rachmaninoff pair (85%) compared to the Kaulbach-Liszt and Johns/Monet/Van Gogh-Musgrave pairs (80% each).

Analogy was the second most frequent response in all three pairs, slightly higher in the Kaulbach-Liszt pair (65%) compared to the Böcklin-Rachmaninoff and Johns/Monet/Van Gogh-Musgrave pairs (55% each).

Description was less frequent than both Enrichment and Analogy in all three pairs, highest in Böcklin-Rachmaninoff (30%) compared to Kaulbach-Liszt and Johns/Monet/Van Gogh-Musgrave (20% each).

Affect was most frequent in the Böcklin-Rachmaninoff pair, with more positive (45%) than negative (25%) responses. Affect was less common in the Johns/Monet/Van Gogh-Musgrave pair, with positive (35%) and negative (20%) responses, and least frequent in the Kaulbach-Liszt pair, with positive (15%) and negative (20%) responses. There is a notable similarity in the distribution of categories across the three art-music pairs.

7.3. Listening Time

To measure listening time preferences, participants were divided into three groups: Full Duration (for those who listened to the entire composition), Partial Duration (for those who listened to approximately half of the piece), and Early Termination (for those who stopped listening before reaching the midpoint).

Table 1 presents the listening time for the music by Liszt, Rachmaninoff, and Musgrave.

Table 1. Listening Time Accounts.

Composers (length of compositions)	Full duration	Partial duration	Early termination
Liszt (13:56 min)	66%	9.5%	24%
Rachmaninoff (18:42 min)	62%	19%	19%
Musgrave (6:11 min)	95%	5%	0%
Average	74%	13%	14%

Table 1 indicates that *Full Duration* was the most common listening preference across all three compositions, regardless of their differences in length. However, Musgrave's shorter piece had the highest rate of *Full Duration* accounts (95%), compared to Liszt (66%) and Rachmaninoff (62%). *Partial Duration* and *Early Termination* were infrequent, averaging approximately 13% and 14%, respectively.

8. Discussion

This study explored aesthetic responses to paintings presented under two conditions: unimodal (painting only) and multimodal (painting accompanied by music that was either ekphrastic or thematically related). Three art–music pairs were used: two ekphrastic pairs (Kaulbach–Liszt and Böcklin–Rachmaninoff) and one thematically related pair (Johns/Monet/Van Gogh–Musgrave).

9. Conclusions, Implications, Limitations, and Future Research

9.1. Conclusions on Unimodal and Multimodal Conditions

9.1.1. Enrichment and Analogy as Dominant Responses in Multimodal Conditions

The most common response in the multimodal condition was *Enrichment*—music enhanced visual perception by revealing new meanings or previously unnoticed elements in the paintings. This enrichment effect appeared consistently across both ekphrastic and related pairings.

The three musical works (by Liszt, Rachmaninoff, and Musgrave) enabled most participants to draw Analogies between auditory and visual elements, effectively bridging the boundaries between the two modalities. Both Enrichment and Analogy responses were unique to the multimodal condition, underscoring the transformative potential of the arts [3–13].

9.1.2. Differences Between Unimodal and Multimodal Experiences in Description, Indeterminacy, Temporality, and Affect

Description: In the unimodal condition, lay viewers primarily focused on recognizable objects, supporting Gardner's view that naïve participants attend to familiar visual features, reflecting visual-spatial intelligence [54]. Descriptions of paintings were more frequent in the unimodal phase than descriptions of music in the multimodal phase. The lower rate of musical descriptions may stem from cognitive overload during simultaneous sensory exposure [43,44]. as well as from the abstract nature of music [2,20]. Unlike the tangible visuals in paintings, classical music can be more difficult for lay listeners to describe due to its complexity and the lack of accessible terminology [55,56].

Indeterminacy: Indeterminacy was more common in painting descriptions during the unimodal phase than in musical descriptions in the multimodal phase. While participants could identify visual features such as colors, shapes, or figures, they often expressed uncertainty about the artwork's overall meaning.

This reflects the subjective nature of visual interpretation, where viewers may notice specific details but remain unsure about the whole or offer idiosyncratic assumptions [31,55,56], as seen in the high rate of Assumption responses in the unimodal phase. In contrast, during the multimodal phase, knowing the music was matched to the painting, made participants more certain about the music's meaning.

Temporality: Responses related to temporality were more common in descriptions of the musical pieces during the multimodal condition than in descriptions of the paintings during the unimodal phase.

Music unfolds over time, prompting participants to note temporal aspects such as tempo changes. Although less common, viewers can also perceive temporality in paintings through narrative elements, such as motion in Kaulbach's The Battle of the Huns. Even static scenes like

Böcklin's Isle of the Dead and Johns' Flag can evoke a sense of past, present, or future events through personal interpretation. Thus, viewing alone can still engage time perception, though less directly than music.

Affect: Affect was relatively infrequent in both the unimodal and multimodal conditions. However, negative affect was more common in the unimodal condition, while positive affect prevailed in the multimodal condition. This aligns with Parrott [38], who demonstrated that multimodal conditions can enhance positive emotional states.

9.2. Conclusions on Art-Music Connections: Ekphrastic and Related Intermedial Music

The level of art-music connection—whether ekphrastic or related—did not affect the aesthetic experience in the Enrichment and Analogy categories. Response rates in both categories remained relatively high, regardless of connection type. While scholars have debated the terminology and definitions of ekphrastic stances [19,57], the strength of the art–music connections in the selected research pairs did not appear to influence participants' responses in terms of enrichment and analogy.

9.3. Conclusions on Listening Time Preference

Full-duration listening was the most common preference across all multimodal phases, possibly reflecting participants' willingness to engage in an uninterrupted experience. However, compared to Liszt and Rachmaninoff, Musgrave's shorter composition had the highest rate of full-duration listening and the lowest rates of partial listening and early termination.

Does this imply that shorter classical compositions lead to longer listening? Not necessarily. Beyond the relative duration of the music, various factors—such as personal taste, mood, familiarity with the musical style, and contextual expectations—can influence both sensory and cognitive responses [58], including preferences for listening time. Moreover, music can alter our perception of time itself, as demonstrated by Droit-Volet et al. [59].

9.4. Designing Multimodal Programs

By selecting art–music pairs with historical or thematic significance, educators, curators, and programmers can craft immersive experiences that enhance visual perception and promote cross-modal analogies. Although related connections are less direct than ekphrastic ones, both foster meaningful associations by linking visual and musical works through shared elements. In arts education and museum contexts, integrating different art forms can deepen engagement and strengthen connections across artistic modes, highlighting the transformative potential of arts integration. Such programs offer opportunities for rich multimodal experiences by merging auditory and visual elements. The temporal flow of music can complement (or contrast) with static visual art, enriching perception and encouraging deeper cross-modal connections.

Music not only enhances visual understanding but also deepens the perception of temporality in visual art. Although a sense of temporality may occasionally emerge from static images, it remains minimal compared to multimodal experiences. In unimodal settings, viewers often focus on observable details but struggle to form a cohesive interpretation, leading to greater indeterminacy. In contrast, multimodal conditions—where music is explicitly related to the painting—can reduce uncertainty by providing auditory and interpretive cues.

However, when designing artistic programs for naïve adults, it is important to consider the limitations of multimodal approaches. Art–music experiences may lead to cognitive overload, particularly when the visual artwork or classical composition is complex and difficult to articulate due to limited terminology and a lack of formal knowledge. Thoughtful selection of art–music pairs—taking into account factors such as clarity and musical duration—can help ensure that the auditory component complements rather than overwhelms the visual experience for naïve adults.

9.5. Expanding Multimodal Exploration

Beyond the three art–music pairs explored in this study, future integrated research can investigate other ek-

phrastic and related connections to gain deeper insights into their impact on participants' aesthetic experiences. This could include exploring a broad range of musical styles—both within and beyond the classical repertoire—such as folk, world music, jazz, film scores, or contemporary experimental genres. Researchers might also examine additional types of art–music connections, including culturally rooted, nature-inspired, spiritual, or narrative associations.

The free listening time paradigm used in this study reflects a naturalistic, participant-driven approach to examining subjective music engagement. Varied listening durations allowed for more authentic, self-directed interaction with the music and provided valuable insights into individual listening preferences. However, this variability also presents challenges, such as decreased data consistency and the need to account for additional factors influencing listening time. Beyond the objective length of the musical work, subjective elements—such as personal taste, familiarity with the musical style, and contextual expectations—also play a role. To address these challenges, future research could explore the benefits of standardized exposure through fixed listening times.

9.6. Study Limitations and Future Directions

This study has several limitations that future research could address:

Participants:

The participants in this study were lay adults and may not fully represent individuals from diverse age groups or those with formal training in music and art. Future studies could include a wider range of ages and artistic backgrounds to achieve a more comprehensive understanding of aesthetic experiences.

Study Design:

In this study, categories were identified post hoc from the data collected under both unimodal and multimodal conditions. Since these categories reflect different types of experiences, they are not directly comparable, making the data unsuitable for statistical analysis that requires consistency across conditions.

Future research could develop more systematically comparable categories, potentially using alternative methods such as a priori questionnaires to enable statistical analysis. Additionally, researchers might include control conditions—for example, reversing the order by presenting the music before the paintings, or adding a separate unimodal music condition.

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Institutional Review Board Statement

Not applicable.

Informed Consent Statement

Informed consent was obtained from all subjects involved in this study.

Data Availability Statement

The data from this study are available from the author upon request..

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Conflicts of Interest

The authors declare no conflict of interest.

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