CINEFORUM
ISSN: 0009-7039
Vol. 65. No. 4, 2025

A Trans-media Study of Painted Imagery in the Animated Film Loving Vincent from the Perspective of Visual Perception Theory

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Abstract

This study adopts Rudolf Arnheim's theory of visual perception—grounded in Gestalt psychology—to objectively examine the perceptual characteristics of painted imagery in trans-media expressions within animated films. It further analyzes how these perceptual features are manifested in specific visual presentations. This research reveals the intrinsic connection between visual formal language and emotional cognition, and explains how the properties of visual perception function as mediating mechanisms that profoundly influence the audience's emotional response and psychological engagement with art. Ultimately, the study aims to provide theoretical and practical guidance for visual expression in animation production, and to foster deeper emotional resonance between art and its audience.

Keywords: Animated Film, *Loving Vincent,* Visual Perception, Trans-media, Rudolf Arnheim, Image

1. Introduction

With the continuous advancement of technology, the forms and modes of media have become increasingly diversified. Human communication activities have evolved through various media eras, including the oral era, the written era, the printing era, and the electronic and digital era. With the ongoing media evolution, painting images have been continuously expanding their expressive possibilities. In trans-media studies, the presentation of painted images in new media imagery should not be regarded as a mechanical replication of the themes or visual elements of the original work. Instead, it should be understood as the artist's reinterpretation and innovative transformation of the original within the context of new media. This transformation involves not only the reconstruction of visual language but also reflects multiple transitions among diverse technological media contexts, extensive cultural exchange contexts, and shifting aesthetic contexts brought about by technological development.

Antonio Gil González and Javier Pardo, building upon the theoretical foundations

laid by Gérard Genette and Irina Rajewsky, developed a general theoretical paradigm for trans-media studies—one that encompasses three key concepts: multimedialidad, remedialidad,and transmedialidad. This model not only offers a methodological framework for the concrete study of intermedial relationships, but also provides a theoretical basis for the cultural reconstruction of meaning and the extension of aesthetic value in the process of media transformation of painted images.

The animated film *Loving Vincent* combines traditional hand-painted art with digital technology, becoming the first feature-length animation entirely composed of painted (oil-painted) frames. It serves as a representative case of transmedia multimediality, where multiple media coexist within the same text or medium (Gil& Pardo, 2018: 23-24). The integration of these media forms constitutes the core of the entire project. The film took approximately six years to complete, involving 125 artists from over 20 countries, utilizing around 3,000 liters of paint to handcraft more than 65,000 frames. Upon release, it gained explosive attention. *Loving Vincent* grossed a worldwide box office total of $33.44 million and received the Best Animated Feature Film award at the 30th European Film Awards, along with a nomination for Best Animated Feature at the 90th Academy Awards[1]. In a highly digitized environment of image production, analyzing the reconstruction of visual language through the painted imagery employed in *Loving Vincent* demonstrates how painting as a traditional art form can be revitalized with modern communicative power. This process stands as an exemplary case of how traditional art can be transformed and regenerated within a digital context.

The existing literature on the animated film *Loving Vincent* can be broadly categorized into three main aspects. First, from the perspective of film literature, scholars have explored the narrative features of the film. Tian (2019) analyzed Van Gogh's character through the symbolic matrix of narrative relationships and behavioral elements, revealing the character dynamics within the animation and dissolving the boundaries between oil paintings and animation. This approach opened new directions for the expression of oil painting language within animation. Through carefully crafted narrative beats, the film gradually reveals Van Gogh's internal conflicts and the external misunderstandings he faced, effectively serving the thematic expression. For instance, Van Gogh's artistic struggles and his tense relationships with those around him are conveyed through a series of meticulously structured narrative beats, allowing viewers to deeply feel his emotional fluctuations and creative drive (Han, 2021: 101-109).

[1] https://movie.douban.com/subject/25837262/awards/

Furthermore, the understanding of the film extends beyond visual content to textual and graphic knowledge. Han et al. (2020) proposed a model that integrates film clips, subtitles, and external graphical knowledge, enabling a deeper understanding of cinematic narratives. The film not only visually presents Van Gogh's artworks but also supplements and interprets his life experiences and emotional changes through subtitles and voiceover narration, offering audiences a more comprehensive view of Van Gogh's art and life. Although these studies focus on how narrative serves thematic expression, they still lack in-depth exploration of how oil painting language functions within the animated form.

Second, from the perspective of animation technology, many studies investigate how to employ experimental animation techniques to disrupt traditional narrative structures and visual conventions, thereby subverting viewers' habitual cognitive patterns and offering a novel sensory and aesthetic experience (Lee,2024:50-79). These studies emphasize aspects such as image, sound, medium, character modeling, post-editing, and animation techniques. However, they seldom address the specific transformation of painted images into the animated medium.

Third, from the standpoint of artistic imagery, some researchers have explored how Van Gogh's pastoral paintings from his Auvers-sur-Oise period were adapted into animated scenes, achieving a dynamic visual expression that transcends time and space (Yao,2018:101-103). The recreation of Van Gogh's painting style in the film enhances its emotional impact. Van Gogh is renowned for his distinctive brushwork and use of color, and the film successfully integrates these elements into its animation production, creating visual and emotional resonance. Particularly, his iconic impasto technique—marked by thick layers of paint and visible brushstrokes—creates a unique texture and depth. This style has also been shown to attract visual attention in data visualization contexts, and its application in the film similarly enhances viewer immersion and emotional engagement (Kozik et al., 2019:266-276).

Moreover, the film's use of color is critical. Color can evoke emotional responses in various ways, with each hue conveying different moods and messages. In *Loving Vincent,* the color design not only faithfully reproduces the style of Van Gogh's original works but also reinforces the emotional atmosphere of the film, allowing the audience to more deeply experience the emotions and stories behind his art.

Based on the aforementioned scholarly research, it has been observed that analytical studies focusing on how the formal perception mechanisms of painted imagery are linked to emotional cognition in trans-media expression remain relatively scarce. Therefore, this paper seeks to apply Rudolf Arnheim's theory of visual perception to explore the trans-media expression of painted imagery in the animated

film *Loving Vincent*. From the perspectives of dynamism, color, and light, the study analyzes the visual perceptual characteristics exhibited by painted images within an animated context. Furthermore, it examines how, while inheriting the aesthetic values of traditional painting, such imagery—through artistic form—elicits emotional resonance among viewers.Accordingly, this study proposes the following two research questions:

1) How do the trans-media strategies employed in animated films utilize Arnheim's principles of visual perception to reconstruct the aesthetic qualities of painted imagery as a medium?

2) How do specific visual elements—such as line movement, color, and lighting—in *Loving Vincent*, as interpreted through Arnheim's theory of visual perception, facilitate emotional and cognitive interaction with the audience?

2. The Relevance of Rudolf Arnheim's Theory of Visual Perception to Animated Film

Rudolf Arnheim's theory of visual perception, rooted in Gestalt psychology, is a form of art psychology that offers applicable standards for eliminating ambiguity and striving for unity in the visual arts. From Arnheim's perspective, when artists engage in artistic practice by applying the principles of visual perception, they are essentially responding to a process of visual stimulation. In the realm of visual arts, both creators and viewers rely on their respective perceptual faculties to produce and appreciate artworks. That is, the artwork functions as a medium that enables the communication of perceptual thinking between the artist and the viewer. In this process, the laws of visual perception are transformed into compositional principles within the artwork itself, and perception responds to the stimulus as a whole (Park,1994:12-13). Therefore, the visual characteristics presented in an artwork refer to the integrated whole of its composition—a collective concept—rather than a mere sum of individual elements.

Arnheim posits that thinking relies on "schemata" embedded in the subconscious mind to decode stimuli and generate knowledge and meaning—this very process constitutes the core of visual thinking. A schema functions as an "algorithmic" system that leads to mental representations; it models the form and features of objects and serves as a cognitive processing framework that enables us to perceive information logically and sequentially (Liu,2020). Visual thinking selectively filters and extracts surface-level features of images—namely, "shape". The perception of shape refers to the recognition of an object's general structural characteristics (Arnheim,2005:37). However, "shape" here does not simply denote external form or appearance, but

rather the totality of structures constructed through perceptual activity.As a result, different aspects of "shape" may give rise to different visual objects, which are, in essence, representations of deeply embedded subconscious schemata. In animated films that translate painted imagery into motion, this process is fundamentally based on static visual compositions. The grasp of "shape" in animation and the organization of visual stimuli are inherently tied to perceptual activity, and thus the act of perception is inevitably accompanied by varying emotional responses. This process is closely connected to Arnheim's visual formal elements—particularly movement, color, and light.

Complete artistic forms are, in essence, forms of force—comprising physical, physiological, and psychological forces. Every dynamically balanced artistic structure exists within a force field, and visual perception has an innate capacity to grasp such forces. Artistic motion shares similarities with physical motion in that both occur through processes of transformation and change. Even seemingly static objects embody a system of opposing and balanced forces; thus, static artworks are the result of tension and equilibrium between visual elements. Arnheim argues that a static object is not devoid of force, but rather signifies a state in which forces have reached equilibrium (Ning,2009:152).Although human visual perception is constrained by physiology and cannot directly observe the inner forces of static forms, artists can organize visual structures in such a way that enables viewers to perceive implied motion. According to Arnheim (1998), the visual impression of motion in art is generally produced through four primary structural types: inclined form, proportional form, sequential form, and deformed form. Among these, the inclined form is the most fundamental and effective way to generate directional tension. Visual perception naturally tends to move from larger proportions to smaller ones, and due to discrepancies in proportion, a visual force emerges that seeks to restore structural equilibrium—thus producing a sense of motion. Sequential forms are especially prominent in stroboscopic art, where although the images themselves do not physically move, successive frames or trajectories allow the viewer's imagination to fill in the gaps, reconstructing them into a complete, fluid motion (Peng,1985:215). Deformation, meanwhile, represents a more complex motion form than proportion change or inclination.

In terms of color theory, animation not only allows for the objective reproduction of color, but also enables the reconstruction of color schemes according to narrative needs. In this sense, color becomes an essential and organic part of visual aesthetics and modeling. It functions as a visual element that conveys characters' psychological states, shapes their personalities, and expresses the thematic intent of the work. Both

shape and color are effective transmitters of visual information. Shape, as a communicative tool, is more efficient than color in terms of structural communication, while color is superior in conveying emotional expression.

Red, yellow, and blue—the three primary pure colors—are fundamental hues that do not share a common denominator and cannot be unified into a single tonal sequence governed by one dominant hue. These colors often serve as static anchors or tonal foundations within a composition. In visual structures, such static anchors provide a stable reference framework for blending mixed colors. The perceptual color mixtures can be categorized into three groups, comprising nine main mixed colors, which should ideally be homogeneous and uniform—meaning that the primary colors are fully blended into them. The graded sequences formed by these mixed colors can guide the eye from one point to another within the image, thereby creating a perceptual sense of directional movement. In contrast, colors that share common components tend to exhibit less visual separation. According to Arnheim (1998), different modes of blending include: similarity of secondary colors; structural opposition based on shared components; similarity of dominant colors, and structural inversion. Among these, the first and fourth blending types lead to harmonious relationships, whereas the second, third(structural opposition based on shared components; similarity of dominant colors) and the juxtaposition of a pure primary color with a basic color containing a guiding component tend to create visual repulsion.

The expressiveness of warm and cool colors is determined by how much they deviate from other colors. The terms “warm” and “cool” themselves are not inherently tied to pure colors, but gain meaning when describing the shift of a specific hue toward another color. For instance, pure high-saturation hues have no inherent warmth or coolness, but when white is used as a base, white with a reddish tint appears warm, while white with a bluish tint appears cool. Within the same hue, higher brightness tends to appear cooler, and greater desaturation intensifies the perceived warmth or coolness of a color (Li,2020:186-189).

Light constitutes one of the most brilliant and magnificent experiences available to human perception. Our visual response to light involves a selective form of attention, which is directly supplied by the eye.; Light is perceived as an inherent property of an object itself rather than as an external phenomenon (Zhang,2020:53-56). This understanding fundamentally differs from the scientific explanation of light as a physical phenomenon. According to Rudolf Arnheim, human visual perception of light has three primary characteristics from a physiological perspective: First, light perception is relative. The brightness of an object as seen by the eye is not fixed;

rather, it depends on the distribution of brightness values across the entire visual field. Second, due to the selectivity of light perception, humans tend to focus on areas that are relatively brighter or darker than typical levels of ambient lighting in daily life. Third, the brightness of an observed object is perceived as inherent and autonomous. When a person imagines an object, the object is often accompanied by an assumed brightness, even if it is not being illuminated. In complete darkness, when an object cannot be seen, people subconsciously believe that darkness conceals the object's brightness, rather than interpreting it as the absence of illumination. Light, when cast upon an object, creates a dual effect: on one hand, the object appears to passively receive an external force; on the other hand, it becomes an active emitter of energy, transmitting visual information to other objects in its environment after being illuminated (Arnheim, 1998:332).

In pursuit of realistic visual effects, modern animated films have moved beyond the 19th-century practice in which animators observed their own facial expressions in mirrors to design character movements. Instead, contemporary productions now rely on interactive motion control systems. As such, animated film is a highly hypothetical art form—although inspired by the real world, it is not constrained by physical reality. Rather, it prioritizes the representation of imaginative visual experiences constructed by the artist through lived experience. This symbolic mode of image-making aligns with Rudolf Arnheim's theory of visual perception, particularly in how artists cognitively and psychologically interpret visual stimuli.

Korean scholar Yu Chun-rye(2020) applied Arnheim's concepts of the interaction between physical and psychological forces to explore the Chinese animation aesthetic of "movement within stillness." Through an analysis of form and color, Yu demonstrated how perceptual contrasts between the real and the imagined are represented in animated scenes. His work reveals the full applicability of visual perception theory to interpreting aesthetic concepts in animation design and film.Therefore, this study will adopt Arnheim's theory of visual perception as an analytical lens to explore the visual representation of painted imagery during its transformation into the animated medium. The goal is to articulate how visual formal language functions as a mediating mechanism that shapes both the emotional resonance of artistic forms and the construction of their aesthetic significance for the audience.

3. The Transformation of Dynamism, Color, and Light in Painted Imagery in the Animated Film *Loving Vincent*

According to Arnheim, visual thinking is one of the highest forms of human

perception. Dynamism, color, and light are the primary visual formal elements in the artistic language of animated film. Together, they facilitate communication between the creator's and the viewer's perceptual thinking. Therefore, this chapter will analyze these three visual elements—dynamism, color, and light—individually to explore how they are transformed in the adaptation of painted imagery within the context of *Loving Vincent.*

1) Dynamism

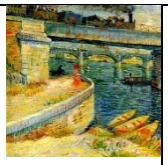
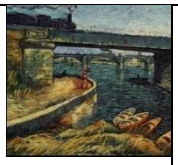
This section explores the dynamic characteristics manifested during the construction of visual imagery, with a particular focus on how movement and directionality are embedded within the visual structure of animation. To this end, the study draws on Rudolf Arnheim's classification of four primary structural patterns that generate a sense of motion in art: the inclined type, the proportional type, the sequential type, and the deformation type.Arnheim argues that compared to vertical and horizontal lines, diagonal lines convey a stronger sense of speed. Furthermore, while straight lines and static forms produce a stable impression, the sequential pattern, composed of dynamically looping lines and shapes, is associated with a sense of active, continuous movement, thereby creating a stroboscopic effect.

Accordingly, this study further subdivides "dynamism" into two aspects: the inclination of lines and the stroboscopic movement derived from sequential continuity. These are analyzed to identify the visual perceptual characteristics of painted imagery as it appears in the animated film *Loving Vincent*, as illustrated in Table 1.

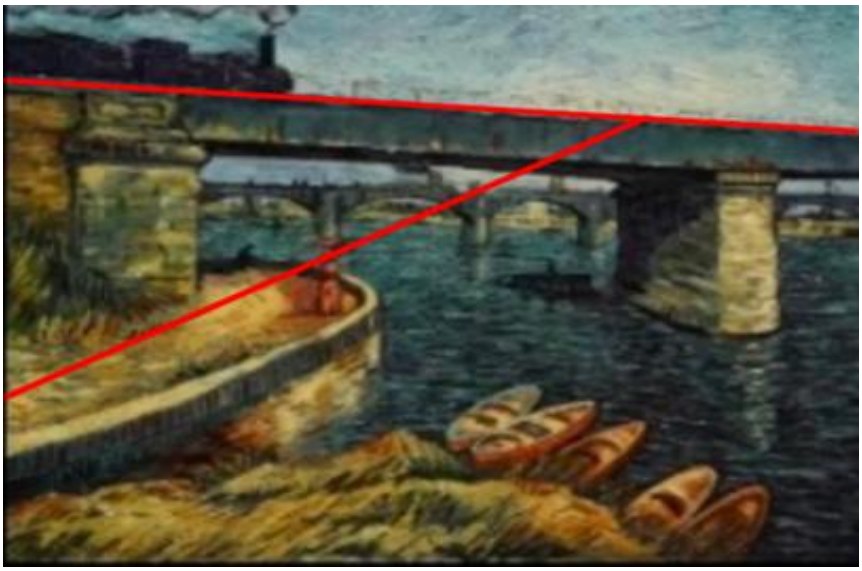
[Table 1]

Dynamism: The Visual Perceptual Characteristics of Imagery in *Loving Vincent*

Form Feature	Sub-topic	Name of Work	Original Image	Research Image	Characteristics in Animated Film	Characteristics in Arnheim's Visual Perception

Motion	Inclined Lines	*Bridges Across The Seine at Asnieres* 1887			·The composition is structured around the horizontal form of the bridge. ·The vertical bridge piers, chimneys, and trees create contrast. ·The diagonal shoreline and boat sails break the static tension.	·Straight lines represent spatial extension; vertical lines symbolize ascent; horizontal lines imply calm continuity. The perpendicular intersection of vertical and horizontal lines creates a "visual force field." · Inclined lines are perceived as deviations and thus convey a strong sense of agency and movement.
	Strobos copic Movem ent from Sequent ial Forms	*The Starry Night* 1889			·Van Gogh's continuous swirling brushstrokes generate a vortex of energy. ·The dominant colors—deep blue and yellow—depict the starry night.	·The sequential pattern evokes perceived movement by recording successive visual inputs either by single retinal receptors or across the entire receptive field—this results in a stroboscopic effect. · Long-wavelength colors produce expansive reactions, while short-wavelength colors evoke constriction. This contrast generates a sense of motion in the viewer.

In *Loving Vincent*, shortly after Armand reluctantly embarks on his journey, Van Gogh's painting *Bridges Across the Seine at Asnières* (1887) appears on screen. The horizontal structure of the bridge serves as the compositional backbone, forming a rigid contrast with the vertical elements such as the bridge piers, chimneys, and trees, thereby establishing a sense of equilibrium. In the animated translation, however, figures along the riverbank and a train on the bridge move along predetermined paths, introducing motion into the otherwise static image. The intersection between the inclined structure of the bridge surface and the direction of the moving train becomes the visual focal point of the composition (see Figure 1), injecting dynamism into the scene while simultaneously creating a psychological implication for the viewer.



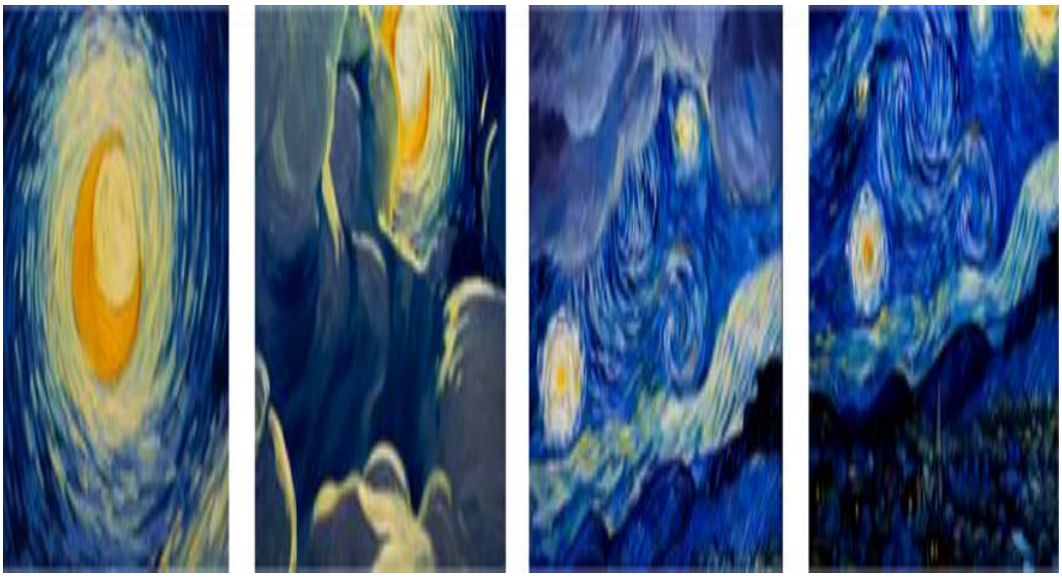
<Figure1> Inclination of Lines: Dynamism of the Image *Bridges Across the Seine at Asnières* in Animated Film

From the perspective of visual perception psychology, straight lines represent linear spatial extension, vertical lines symbolize ascent, and horizontal lines suggest calm continuity. The orthogonal intersection of vertical and horizontal lines establishes a "force-field equilibrium" within the visual field. In contrast, inclined lines are consistently perceived as deviations, thus introducing a strong sense of dynamism. In this context, the inclination of the bridge surface intersecting with the directional movement of the train on the bridge creates the center of visual tension within the composition. This becomes a visual metaphor for fate, transforming the narrative's sense of compulsion into a spatially embodied structure.

This composition not only guides the viewer's attention along the trajectory of movement but also roots itself in the narrative tension between father and son. In the

film, Armand is forced by his father, the postmaster, to personally deliver Van Gogh's final letter. The father's line, "If you passed away first and had a letter to send to me, I would really want to receive it. But what if I go first—wouldn't you want to receive it?" carries clear undertones of emotional manipulation and moral coercion. This is not merely an expression of paternal love, but also a form of emotional pressure disguised as care—an imposition of the father's will upon the son's freedom. Such a narrative design allows the audience to intuitively perceive the character's passive propulsion while emotionally resonating with Armand's inner conflict and resistance, thereby deepening the multidimensional understanding of the psychological state of being "compelled to move forward."

Accompanied by ethereal music, the scene opens with a view pulling out from the moon in Van Gogh's *The Starry Night*, using a telephoto lens to highlight its intricate details. The scene is rendered primarily in deep blues and yellows, employing Van Gogh's signature impassioned and wild brushstrokes to stir a vortex of energy. The camera slowly pans downward to capture the surging storm clouds. As the pace of the camera movement increases, the clouds rapidly rise, then part to reveal the stars. Under a wide-angle lens, the starry sky and cypress trees come into view. The camera rotates, revealing the village, houses, streets, and crowds in succession. After the protagonist appears, the camera returns to a close-up, fully presenting the imagery of *The Starry Night* (1889) (see Figure 2).



<Figure2> Stroboscopic Movement: The Dynamic Imagery of *The Starry Night* in Animated Film

In *The Starry Night*, the swirling clouds and starlight are rendered in curvilinear forms composed of countless dots arranged in sequential patterns. Although these patterns do not repeat in a "symbolic" manner as movement does in the physical world, the densely dotted brushstrokes create a visual "motion trajectory," where the physical movement of the brush is continuous. The movement perceived by the viewer, however, originates not from physical motion itself, but from the retina's reception—either by individual photoreceptors or entire receptive fields—of a sequential activity. This results in stroboscopic movement, which imparts a graceful and natural sense of motion to the image.

In stroboscopic art, such sequential patterns or trajectories stimulate the viewer's visual imagination, allowing the mind to complete the motion psychologically, thereby generating a sense of flow and rhythm. This ceaseless sense of movement resembles an emotional outburst—akin to a restless, agitated mental state. It conveys Van Gogh's anxiety, loneliness, struggle, and transcendent spiritual experience. As viewers perceive the flow within the image, they are also profoundly affected by the emotional turbulence embedded in the artist's inner world.

Secondly, long-wavelength colors tend to elicit expansive reactions, while short-wavelength colors produce contractive responses. In the painting, the yellow circles exhibit an outward-expanding motion from the center, a movement that clearly appears to approach the viewer's position. In contrast, the surrounding blue arcs generate an inward motion, with a directional flow that recedes from the viewer. This relative motion creates a perceptible sense of movement for the viewer. The exaggerated lines and the distorted forms of the sky and architecture break away from conventional notions of painted space, conveying the twisted emotional state within Van Gogh's inner world.

1) Color

This section focuses on the color characteristics embodied in the construction of painterly imagery within animated films, with particular attention to how the syntactic mixing of colors is embedded in the visual structure of animated imagery. Based on Rudolf Arnheim's theory of the systematization of color in visual perception, he argued that mixed colors form connections through shared elements, yet at the same time exhibit mutual repulsion. Therefore, by analyzing the syntax of color mixing in detail, this study explores the relationship between color and emotional psychology in the process of painterly image translation in the animated film *Loving Vincent*, as shown in Table 2.

[Table 2]

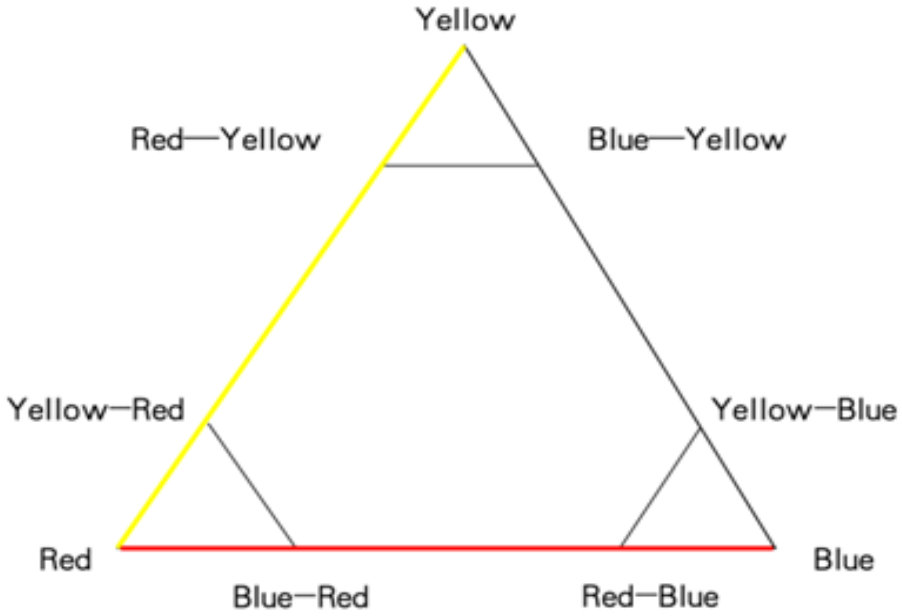
Form Feature	Sub-topic	Name of Work	Original Image	Research Image	Characteristics in Animated Film	Characteristics in Arnheim'sVisual Perception
Color	Color Mixing	*Railway Carriages* 1888			·High-saturation strokes of yellow-green and lemon. Yellow are used for the grass and sky, mixed with blue and red in the carriages, forming complementary purples and greens. ·A repelling relationship exists between the purplish-red train and the orange road. ·The yellow coat of the figure in the middle contains golden shadows that blend with the reddish-orange train obscured by the purplish-red carriage.	·The contrast of complementary colors enhances unity. ·When the dominant red color of two areas is split, each part enters mutually repelling sequences. The conflict created by this opposition hinders the eye from bridging the spatial distance between the two objects. - Through structural transformation, these colors are visually connected.

	Color Assimilation	*Young Man with Cornflower* 1890			·The cornflowers use cobalt blue and ultramarine, contrasting with the orange/yellow ochre skin tones. ·In the middle ground, the face, hair, and wheat field are differentiated using distinct shades of yellow.	·Blue/orange complementary opposition creates visual vibration. ·Similarity in dominant colors causes conflict. When a third dominant color that lies between the two conflicting ones is introduced, the original contrast disappears—this is known as the "assimilation".

Color: The Visual Perceptual Characteristics of Imagery in *Loving Vincent*

In Loving Vincent, the scene in which Armand chases the train is visually based on Van Gogh's painting *Railway Carriages* (1888) (see Figure 3). The first train to appear in the scene is purplish-red. Due to the repelling relationship between the purplish-red of the train (a mix of blue and red) and the orange-red of the road (a mix of yellow and red), a color conflict emerges. As Rudolf Arnheim noted, when the dominant color red is split between two regions, it enters two opposing color sequences: the red–blue sequence (represented by the red line segment) and the red–yellow sequence (represented by the yellow line segment), as shown in Figure 4. The clash between the train's motion and the road's color creates a visual obstacle that further prevents the eye from bridging the spatial gap between these two elements, producing a sense of rupture between the train and the road. This makes it difficult for viewers to visually connect the two regions into a coherent whole. A similar color-mixing strategy is also applied to the two trains moving in opposite directions, whose color arrangements exhibit the same kind of contrast and repulsion.

<Figure3> The Color Elements of *Railway Carriages* in the Animated Film

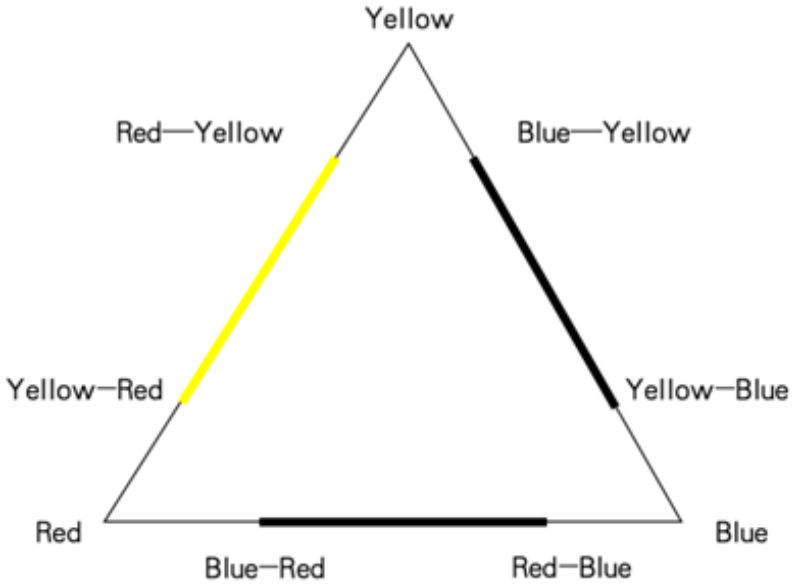


<Figure4> Similarity of Dominant Colors: Color Mixing Methods in the Imagery of *Railway Carriages* in Animated Film

By contrast, the use of high-saturation yellow-green and lemon yellow in the grass and sky, combined with the blue and red of the train carriages to form purplish-red and green, creates a complementary color relationship. This contrast between purplish-red and green enhances the overall unity of the composition, allowing the sky, grass, and train carriages to be more easily integrated into a dynamic visual system. As Arnheim pointed out, warm colors advance while cool colors recede; Van Gogh employed this principle to make the train appear as if it is surging forward, creating a

visual sense of motion.

In the scene where the protagonist chases the train along the road, he wears a yellow coat, and the shadows it casts contain golden hues. Among the two trains moving in opposite directions, the purplish-red train moves forward, gradually revealing the orange-red train behind it. This combination of color and motion structures enables the eye to achieve visual harmony through structural reversal. As shown in Figure 5 (in yellow), this coordination is made possible through the blending of red-yellow and yellow-red hues in the perceptual structure, thus avoiding a visual conflict between the character and the orange-red train.



<Figure5> Structural Reversal: Color Mixing Method in the Imagery of *Railway Carriages* in Animated Film

However, it is worth noting that the train Armand ultimately boards is a purplish-red one heading in the opposite direction. This contrast between color and direction of movement creates strong emotional tension on a visual level, while also suggesting the character's internal complexity and struggle on a narrative level. After learning that the intended recipient, After hearing Theo, the recipient, has passed away, Armand no longer needs to deliver the letter and is not truly willing to continue his journey. Nevertheless, driven by his questions about the truth behind Van Gogh's death and his inner sense of duty and destiny, he ultimately sets out on the journey of pursuit. Although his initial motivation is uncertain, as the investigation progresses, he seems to be propelled by a greater force, compelled to move forward. This psychological state of "passive progression" is reinforced through the film's use of color.

A similar application of the visual perception systematization of color mixing is found in *Loving Vincent* in the episode involving the "Boy with Cornflowers." Through the use of color, the film presents a refined structure of visual perception and subtle psychological implications. The boy brings cornflowers to Van Gogh, yet throughout the scene, he never clearly expresses a stance or emotional judgment regarding the painter's death. Notably, in terms of color treatment, the filmmakers chose to convey this sense of innocence and emotional distance through visual language rather than dialogue.

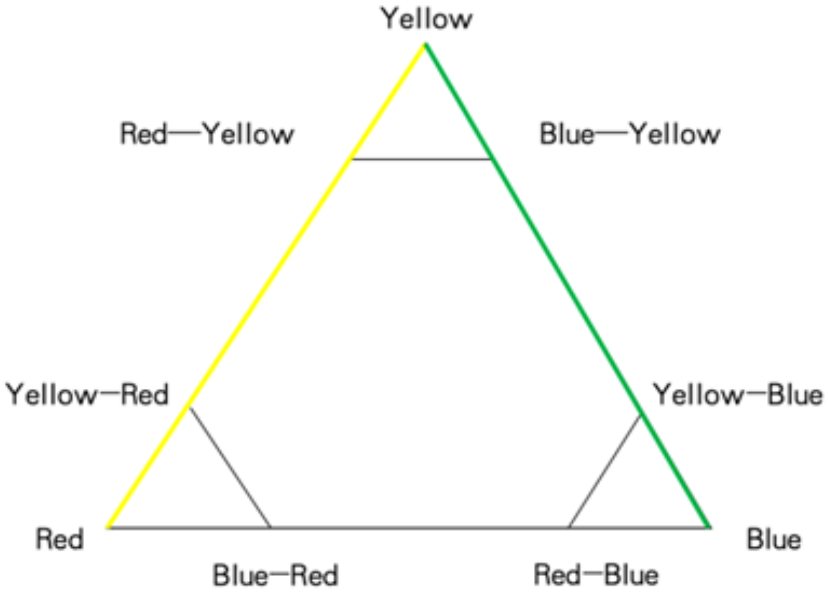
The visual language of color appears in the imagery of *Young Man with Cornflower*(1890). The cornflower's "unnatural blue"—whereas in reality cornflowers are bluish-purple—is depicted using cobalt blue mixed with ultramarine. This contrasts with the orange-yellow and ochre tones of the boy's skin, creating a complementary opposition between blue and orange that results in visual vibration. In the middle ground, as shown in Figure 6, two shades of yellow appear simultaneously: one with a slight green tint and the other with a slight red tint. When observed separately, both appear to be pure yellow. In the composition, the distinction between foreground and middle ground relies more on the brightness of the colors than on their hue.

<Figure6> The Color Elements in *Young Man with Cornflower* in the Animated Film

The distinction between the middle ground and background is achieved through color differentiation. In the middle ground, two shades of yellow appear simultaneously: one slightly greenish and the other slightly reddish. When observed separately, both appear to be pure yellow; however, when viewed side by side, one

appears greenish and the other reddish. This visual conflict is caused by the similarity of dominant colors (see Figure 7), where the two hues fall into mutually repelling color sequences—yellow–red (indicated by the yellow line) and yellow–green (indicated by the green line).

However, on the boy's face, a third shade of yellow—positioned between the greenish and reddish yellows—is introduced. When this intermediary yellow is placed between the two differing yellows, the contrast between them disappears, and the entire composition appears as a uniform field of yellow. This phenomenon is known as assimilation. Such visual unity not only eliminates facial tension but also dissolves any potential psychological shadows, making the boy seem as though he is immersed in light, exuding a childlike quality as if "soothed by sunlight."



<Figure7> Similarity of Dominant Colors: Color Mixing Method in *Young Man with Cornflower* in the Animated Film

In addition, the creators use bright and soft lighting to make the boy stand out from the somewhat heavy background environment, rendering him almost like a figure who has stepped out of Van Gogh's canvas—free of judgment, devoid of emotion, simply fulfilling the task of delivering a bouquet. The combination of color and lighting not only constructs a visual focal point but also subtly suggests the boy's natural emotional distance from the theme of death: he is not a witness to tragedy, but rather a transient presence in a warm and gentle world.

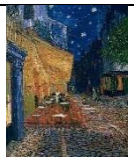
3)Light

This section explores the characteristics of light and shadow as expressed through painterly imagery in the film, with particular attention to the symbolic nature of light

and how relative brightness is embedded within the artistic form of animation. Arnheim suggested that light exerts a dual influence on the objects it illuminates. The brightness of an object's surface is determined by both the intrinsic brightness of the object itself and the intensity of the external light source. Brightness values are relative and are often highlighted by the contrast with surrounding areas. When changes in brightness occur, both systems of deformation—those caused by perspective and by illumination—are simplified, thereby producing a dual form of visual separation (Zhang,2020:53-56). Accordingly, in analyzing *Loving Vincent*, this study aims to examine how light, as one of the systematized visual perception principles, evokes emotional resonance. See Table 3.

[Table 3]

Light: The Visual Perceptual Characteristics of Imagery in *Loving Vincent*

Form Feature	Sub-topic	Name of Work	Original Image	Research Image	Characteristics in Animated Film	Characteristics in Arnheim's Visual Perception
Light	Symbolism of Light	*Mother Roulin With Her Baby1888*			·The face of Theo's wife is accentuated by strong side lighting, making one side of her face brightly illuminated while the other remains in shadow.	· Light plays a dual role on the objects it illuminates: on one hand, the object seems passively affected by an external force; on the other, it appears to actively emit energy, becoming a source of light itself.
	Relative Brightness	*Cafe Terrace at Night 1888*			·The café under the lights is warm and bright, while the street to the right and in the	·Light does not illuminate objects uniformly, but rather forms a gradation from the brightest

					background is a dark, cold-toned night scene.	point near the source to the darkest areas. This perceptual ability corresponds to how we perceive spatial depth and object size.

In the scene where Theo recalls Van Gogh in *Loving Vincent*, the filmmakers skillfully employ symbolically charged lighting. As illustrated in Figure 8, Van Gogh's 1888 painting *Mother Roulin With Her Baby* depicts Theo's wife illuminated by a beam of side light—one side of her face is lit while the other falls into shadow, creating a stark contrast between light and dark. According to Arnheim, light exerts a dual influence on the objects it touches: on one hand, the illuminated object appears to passively receive an external force; on the other hand, it seems to transform into an active source of radiant energy. In other words, once illuminated, the object transmits information to other elements within the scene.

<Figure8> Symbolic Elements: Light in *Mother Roulin With Her Baby* in the Animated Film

In the film, the face of Theo's wife is accentuated by the intense lighting. Typically, light is emitted from a source; however, when the brightness at a particular location significantly exceeds that of other areas within the frame, the region no longer serves merely as a passive recipient of light. Instead, it becomes an active emitter, projecting meaning toward other parts of the composition.

This treatment of light renders her not only the visual focal point but also the emotional source of comfort. She appears to actively emit tenderness and emotion, soothing Theo beside her. As a result, she becomes the emotional anchor of the composition, softening its psychological tension. Her presence contrasts with Theo's inner conflict and repression, symbolizing an unspoken sense of understanding and support.

The creators similarly employed the visual language of lighting to represent Van Gogh's *Café Terrace at Night* (1888). The entire scene is set against a nocturnal backdrop, where the ambient lighting is not homogeneous. Instead, it presents a gradation from the brightest areas closest to the light source to the darkest regions further away. This orderly distribution of brightness causes objects within the frame to appear in hierarchical layers under illumination, establishing a structured visual depth.

Arnheim (1998) pointed out that under such lighting structures, one can perceive equal brightness in identical objects directly and automatically, without relying on knowledge or rational inference. For example, as shown in Figure 9, although the surfaces of a series of café tables display varying brightness levels due to their distance from the light source, the ratio between the brightness of the first table and its surrounding environment is the same as the ratio for the Nth table. This perceptual ability aligns with our capacity to perceive the relative size of objects in three-dimensional space. In uniformly lit environments, brightness corresponds to spatial conditions where all objects are equidistant from the viewer. In contrast, when lighting is distributed in gradients, it creates a pyramid-like spatial configuration, thereby generating a sense of visual depth.

<Figure9> Relative Brightness of Light: Lighting Elements in *Café Terrace at Night* in the Animated Film

Although the scene depicts a nighttime setting, the clear and orderly structure of the overall ambient lighting provides viewers with a strong sense of spatial orientation and psychological security. The distribution of light in the film reflects a structured non-uniformity. This non-uniformity must be sufficiently simple and distinct from the inherent state of the objects themselves for the viewer to perceive the scene with clarity. Such visual clarity effectively counteracts the potential psychological anxiety induced by darkness and instead evokes a subjective sense of control and tranquility.

This orderly lighting structure not only fulfills the basic requirement for spatial perception but also dynamically activates the viewer's emotional projection mechanism. Under the guidance of light, visual perception facilitates a psychological transition from "observer" to "participant." Viewers are no longer merely watching images on a screen; rather, they enter the world of the film. Through the perceptual pathways shaped by light relationships, they gradually form emotional connections with the characters and begin to experience the tenderness and solitude that permeate the night in Arles.

4. Conclusion

This study reviews Rudolf Arnheim's theory of visual perception grounded in Gestalt psychology and highlights its theoretical value in offering a more objective interpretation of aesthetic concepts in animation, particularly regarding the use of

painterly imagery within frame-by-frame visual structures.Arnheim's theory emphasizes perception as an active cognitive process and advocates the notion that "perception is thinking." Vision, therefore, is not merely the passive reception of external stimuli but an active process of understanding and cognition. This framework offers a robust theoretical foundation for animated films, especially those that incorporate painterly images as their primary visual form.

Loving Vincent, as a quintessential example of the deep integration between painting and cinematic media, vividly illustrates the central role of visual perception in artistic communication through its trans-media transformation of three visual elements—motion, color, and light.In terms of motion, the film employs slanted lines and the stroboscopic rhythm of continuous animation to generate a surface-level illusion of movement, thereby constructing a tension between stillness and motion and evoking emotional expression through visual dynamism.In terms of color, a mixed syntax of hues is used to create dual visual contexts: one of compositional structure and the other of emotional direction. Color relationships not only establish spatial logic within the visual field but also serve narrative functions by guiding emotion and suggesting psychological states.In terms of light, symbolic illumination creates a dual effect on the illuminated object: it is both passively affected and actively emits meaning. When light's relative brightness is arranged in gradients, it mirrors a pyramidal spatial structure that activates the viewer's emotional projection mechanism, facilitating emotional interaction with space through active perception.

Although these three visual elements—motion, color, and light—are not independent but coexist in a synergistic and compound manner within the animated film, any one of them can dominate and guide the viewer's perceptual focus and emotional response.This study explores how specific visual form languages in animation—mediated by Arnheim's theory of visual perception—establish a profound connection between artistic works and the viewer'affective-cognitive response. In doing so, it provides theoretical support and practical guidance for visual expression in artistic creation and promotes deeper emotional communication between art and its audience.

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