New Insight into Liu Kang’s Village Scene (1931): A Non-Invasive Investigation by Technical Imaging

Damian Lizun

Heritage Conservation Centre, National Heritage Board, 32 Jurong Port Rd, Singapore 619104, Singapore; damian_lizun@nhb.gov.sg or d.lizun@fineartconservation.ie

Abstract: This study examines the intriguing peculiarities of the surface paint layer found in the painting Village scene (1931) by renowned Singapore artist Liu Kang (1911–2004). The incorporation of non-invasive visible light (VIS) and near-infrared (NIR) photography techniques, combined with high-power digital microscopy, revealed unusual features on the surface paint layer. Flattened impastos, clusters of incrusted foreign paint unrelated to the existing paint scheme, and fragments of paper with printed traditional Chinese characters were identified on the painting’s surface. The results of the analyses cross-referenced with the archival photographs enabled the consideration of the specified features of the paint layer as unintentional damage caused by the artist due to inadequate storage and transportation conditions—paradoxically, in his attempt to protect the painting. As these damaged areas pose potential display and conservation problems, three conservation strategies were proposed based on ethical guidelines formulated by various governing bodies for the conservation profession. This study demonstrates that there is no universal conservation solution that can satisfy conflicting aesthetic and ethical opinions. The damage to the paint layer affects the visual properties of the artwork but also provides evidence of its complex history. In light of the above, there may be valid arguments both for returning the painting to its original state and for preserving its current condition. Therefore, good practice would require balanced judgments from conservators and curators, considering Village scene in the broader context of Liu Kang’s early painting practice and the existing archival information about the artist.

Keywords: Liu Kang; near-infrared; newsprint; traditional Chinese characters; alterations to the paint layer; conservation ethics

1. Introduction

Liu Kang (1911–2004) was a Chinese emigree to Singapore whose painting career was strongly influenced by the Modernist movement and Chinese painting traditions. His interest in these sources of inspiration was piqued when he was studying art in Shanghai and Paris. Liu Kang studied art at the Xinhua Art Academy in Shanghai (1926–1928) during a time of social reform, when there was a growing debate in the artistic circles about revitalising Chinese painting practices by incorporating ideas from the School of Paris [1–3]. He continued his studies at the Académie de la Grande Chaumière in Montparnasse (1929–1932), where he developed a fascination for the works of Matisse, Cézanne, Gauguin, and van Gogh, all of whom he referenced in his later career [4–7]. Liu Kang’s early artistic achievements in Paris were publicly recognised when he exhibited at the Salon d’Automne in 1930 and 1931. After returning to Shanghai in 1933, he worked at the Shanghai Art Academy until 1937, when the outbreak of the Second Sino-Japanese War (1937–1945) prompted him to move to Malaya. He subsequently settled permanently in Singapore in 1945, where he continued to develop as an artist and went on to play a vital role in the development of modern art in the city-state.

The case study investigated in this paper is Village scene (1931), an oil-on-canvas painting measuring 46 × 55 cm (Figure 1a). The painting belongs to the National Gallery Singa-
The work was created in France and depicts farmhouses in a mountainous landscape. The painted scene was executed rapidly in one uninterrupted session. The attractive visual effects were achieved by directional and highly textured brushwork, combined with the contrasting juxtaposition of solid colours, reflecting that the artist was inspired by Modernist techniques [8]. The overall condition of the painting is sound, and the primary support and paint layer are stable. However, a simple visual examination of the painting’s surface reveals many flattened impastos, dark spots, and clusters of colours unrelated to the existing paint scheme, as well as remnants of printed paper containing Chinese characters (Figure 1b–d). The features of the paint layer outlined above undoubtedly have a negative effect on the aesthetic properties of the painting, which is one of Liu Kang’s earliest artworks in the NGS collection.

Figure 1. (a) Liu Kang, Village scene, 1931, oil on canvas, 46 × 55 cm, showing the areas of the paint defects (blue, pink, and green rectangles) and corresponding details of the painting revealing (b) flattened impastos, (c) dark spots and clusters of colours unrelated to the existing paint scheme, and (d) remnants of printed paper containing characters. The painting was a gift from the artist’s family. Collection of National Gallery Singapore. Image courtesy of the National Heritage Board, Singapore.

The investigation of artists’ painting techniques and materials in order to better understand the deterioration process of artworks and support the conservation strategies is
a common practice. The correlation between artists’ painting practices and the ageing and degradation of their artworks is revealed through complex technical studies [9–12]. Moreover, the combination of analytical techniques with the analyses of archival sources can give an insight into intriguing technical features, alterations, or areas of damage, which could have been misinterpreted and inaccurately attributed. For example, old retouchings found in John Linnell paintings were attributed to the artist himself and accepted as a legitimate part of the compositions, even though they were not integral to his artistic process [13]. Similar observations were recorded for Liu Kang’s paintings: the artist had attempted to address the issue of severe paint losses by retouching and overpainting the surrounding original paint [14]. The studies evidenced that the artists’ painting practice was often influenced by external circumstances. Moreover, these results prevent treatment decisions that could unintentionally remove later additions by the artists. However, the reduced visual integrity of the artworks caused by the artists’ alterations may trigger ethical concerns about the extent of conservation intervention [14]. Similar peculiarities of the surface paint layers as those found in Village scene were observed in Clyfford Still’s paintings and attributed to his storage methods [15,16]. Despite the extensive technical research conducted on his artworks, the available publications do not address the conservation and display implications caused by these features. Hence, in this context, the unusual features found in Village scene encouraged the author to delve deeper into their structure and origin to enhance the understanding of the painting’s history and how it is perceived and to contribute to a future conservation strategy.

2. Materials and Methods

The painting Village scene was investigated in the Paintings Conservation Department of the Heritage Conservation Centre in Singapore. The adopted investigative approach relied on non-invasive imaging techniques. The surface of the painting was first examined using photography in visible light (VIS) to document the peculiarities of the paint layer, such as flattened impastos, clusters of different colours incrusted in the paint surface, and remnants of newsprint. Near-infrared (NIR) photography was employed to enhance the poor legibility of the print found on the fragments of paper that were adhering to the painting’s surface. The sets of VIS and NIR images were further examined in an attempt to trace and interpret the Chinese characters. The photography techniques were followed by high-magnification digital microscopy in order to investigate the damage to the impastos, to understand the nature of the clusters of different colours found in the impastos, as well as to study the structure of the newsprint.

2.1. Technical Photography

The painting was photographed with a modified-to-a-full-spectrum (360–1100 nm) Nikon D850 DSLR camera (Tokyo, Japan). The camera was equipped with a Nikon AF Micro NIKKOR 60 mm f/2.8D lens. The images were acquired according to the workflow proposed by Cosentino [17]. The X-Rite ColorChecker Passport (Grand Rapids, MI, USA) and American Institute of Conservation Photo Documentation target (Washington, DC, USA) were used for the camera calibration and colour management of the images. VIS images were acquired by mounting on the lens X-Nite CC1 filter (Carlstadt, NJ, USA), which enabled the transmission of the reflected visible light in the range 400–780 nm. NIR images were acquired with a Heliopan RG1000 filter (North White Plains, NY, USA), which blocks the visible and infrared wavelengths below 900 nm. The NIR photography enabled the obtention of a higher contrast between the black print absorbing NIR radiation and the brighter areas of the paint layer reflecting the infrared rays, also taking advantage of the increased transparency of pigments at higher wavelengths. The illumination system for both types of photography consisted of two Lastolite Ray D8 lamps equipped with 500 W tungsten bulbs emitting 3200° Kelvin light. Further processing of the images included white balance and exposure adjustments as well as rotation, which were conducted using Adobe
Photoshop CC (San Jose, CA, USA) according to the standards described by the American Institute of Conservation [18].

2.2. Digital Microscopy

The painting was examined using a Keyence VHX-6000 digital microscope (Osaka, Japan) equipped with a zoom lens capable of magnifications ranging from $20\times$ to $2000\times$.

3. Results

3.1. Flattened Impastos with Paint Spots

VIS photography and digital microscopy revealed flattened impastos with intriguing chunks of pigment particles that do not appear in the surrounding areas of the paint layer. For example, flattened impastos of the red roof and yellow wall of the farmhouse in the foreground of the composition contain large clusters of blue, green, yellow, red, and white pigment particles (Figure 2a,b). Impastos of the sky area achieved with light shades of blue and green are visually disturbed by brown, green, blue, and red spots (Figure 2c). Similarly, the impastos of the mountains, painted in dark blue and violet, contain clusters of dark green, brown, and red pigments (Figure 2d). In addition, clusters of dark red and green pigments were observed in the impastos of the green painted fields (Figure 2e).

Significantly, these clusters of different pigment particles do not resemble brush or palette knife strokes. On the contrary, they appear to be stuck to the paint surface. However, the fact that they appear only in the impasted areas excludes the possibility of an insufficient dispersion of pigments in the paint medium or contamination with paint from tools that were not completely clean. This suggests that large pigment chunks were not part of the artistic process but rather linked to the causes of impasto flattening.

The archival photographs of the artist in his rented rooms in Paris reveal that, due to financial constraints, he probably reused auxiliary supports, resulting in some of his completed artworks being mounted directly on walls (Figure 3a). As a prolific artist, he faced storage challenges, and his artworks that could not be displayed on walls were stored unstretched under the bed, as seen in a fragmentary archival photograph (Figure 3b,c).

Based on evidence from archival photographs and the characteristics of the damage to the paint layer, it can be hypothesised that, shortly after the painting was completed, it was removed from the auxiliary support and stored flat. The high impastos of the dry but still plastic paint layer of the Village scene were inevitably flattened and contaminated with large chunks of pigment from other artworks placed on top. The pressure exerted on the paint layer was probably significant, as some paint fragments were transferred together with the ground layer; microscopic imaging revealed reversed white ground fragments with traces of blue paint beneath. Interestingly, a canvas weave imprint can be seen on the white ground fragments (Figure 4a,b). Therefore, these observations support the notion that the damage to the paint layer occurred in France. However, it is also conceivable that the painting was exposed to similar conditions in transit to Shanghai in 1932.

These findings display some resemblance to certain paintings of Vincent van Gogh, which were unintentionally damaged by the artist when he packed them poorly for shipping to his brother Theo. The reverse sides of these paintings are contaminated with paint originating from other artworks, and the paint surfaces bear imprints of the canvas structure, indicating that the paintings were in contact with each other [19]. However, according to van Gogh’s letter to his brother dated 4 November 1885, the artist was aware of these areas of damage and considered them insignificant. He wrote, “Don’t let it bother you if, in my studies, I just leave smaller or larger protrusions of paint in the brushstrokes. They are of no significance” [20]. Similar areas of damage were observed in the paintings by Clyfford Still, who, due to space constraints in his studio, removed the canvases from the stretchers and rolled them onto the tubes almost immediately after completion. The artist usually rolled a few paintings per tube, although some tubes already had as many as 13 paintings on them. This radical storage solution contributed to the embedding of
cotton canvas fibres and dirt in the soft paint layer, flattened impastos, and canvas weave and interleaving material (aluminium foil and wax paper) impressions [15,16].

Figure 2. Detailed images of the paint layer photographed in VIS raking light revealing unusual chunks of pigment particles in the flattened impastos of the (a) red roof and (b) walls of the farmhouse. Digital microscope images of the impastos with unusual clusters of pigment particles found in the impastos of the (c) sky, (d) mountains, and (e) green fields.
Figure 3. (a) Archival photograph of Liu Kang in his rented room in Paris in 1931 indicating unstretched paintings on the wall, (b) remaining fragment of an archival photograph of the artist’s rented room in Paris in 1931 with the marked area under the bed (pink rectangle), and (c) corresponding detail showing stacked paintings indicated with arrows. Liu Kang family collection. Images courtesy of the Liu family.

Figure 4. Digital microscope images (a,b) of the reversed white ground fragments with traces of blue paint beneath, stuck in the plastic impasto. The imprinted texture of the canvas weave can be seen on the white ground fragments. Blue arrows indicate traces of blue paint facing the brown impasto of the painting, while red arrows indicate the reversed fragments of the white ground layer of the paint flakes.

3.2. Fragments of Paper with Printed Characters

The paper fragments that are firmly attached to the paint layer are found predominantly over the impasted areas. A microscopic examination of the paper reveals a fibrous structure (Figure 5a) with some large particles that resemble wood when viewed in a radial section (Figure 5b–d). Furthermore, certain paper fragments display black printed characters. The ink from the print is bonded to the paper substrate, and no instances of ink transfer onto the paint layer were documented.
These findings display some resemblance to certain paintings of Vincent van Gogh, which were unintentionally damaged by the artist when he packed them poorly for shipping to his brother Theo. The reverse sides of these paintings are contaminated with paint originating from other artworks, and the paint surfaces bear imprints of the canvas structure, indicating that the paintings were in contact with each other [19]. However, according to van Gogh’s letter to his brother dated 4 November 1885, the artist was aware of these areas of damage and considered them insignificant. He wrote, “Don’t let it bother you if, in my studies, I just leave smaller or larger protrusions of paint in the brushstrokes. They are of no significance” [20].

Similar areas of damage were observed in the paintings by Clyfford Still, who, due to space constraints in his studio, removed the canvases from the stretchers and rolled them onto the tubes almost immediately after completion. The artist usually rolled a few paintings per tube, although some tubes already had as many as 13 paintings on them. This radical storage solution contributed to the embedding of cotton canvas fibres and dirt in the soft paint layer, flattened impastos, and canvas weave and interleaving material [15,16].

### 3.2. Fragments of Paper with Printed Characters

The paper fragments that are firmly attached to the paint layer are found predominantly over the impasted areas. A microscopic examination of the paper reveals a fibrous structure (Figure 5a) with some large particles that resemble wood when viewed in a radial section (Figure 5b–d). Furthermore, certain paper fragments display black printed characters. The ink from the print is bonded to the paper substrate, and no instances of ink transfer onto the paint layer were documented.

![Figure 5. Digital microscope images displaying (a) the fibrous structure of the paper remnant and (b–d) large particles that resemble wood when viewed in a radial section.](image)

The printed characters were identified as traditional Chinese. Due to the poor condition of the paper and print, they appear in small groups or independently, reversed and rotated 90° clockwise in relation to the painted composition (Figure 6a,b). This suggests that the paper was printed on the side that was facing the paint layer. If the paper had been printed on both sides, some characters would have appeared in a normal orientation. The reversed and rotated orientation of the characters suggests that the recto side of the printed paper and the painting were facing each other, and the verso side of the characters is visible through a thin layer of plant fibres in the paper.

The legibility of the traditional Chinese characters—not readily detected by VIS photography—was improved using the NIR technique. An enhanced contrast was achieved between the black print absorbing NIR radiation and brighter areas of the paint layer reflecting the infrared rays. Since traditional Chinese characters appear in a format known as vertical writing, the lines of text are aligned vertically in columns that are read from right to left, with each column starting from the top and proceeding downward. Unfortunately, translating the characters proved challenging due to print that was missing from the paper remnants. Nevertheless, it was possible to unravel certain characters that appeared on the farmer’s house on the left edge of the painting, as follows: 民 (mín), 智 (zhì), 書 (shū), 公 (gōng), 司 (sī), and 局 (jú) (Figure 6c). The probable translation of these characters is “Minzhi Bookstore Company”. An internet search revealed that Shanghai Minzhi Bookstore was a leading publishing company and bookstore established in Shanghai in 1921 [21].
The printed characters were identified as traditional Chinese. Due to the poor condition of the paper and print, they appear in small groups or independently, reversed and rotated 90° clockwise in relation to the painted composition (Figure 6a,b). This suggests that the paper was printed on the side that was facing the paint layer. If the paper had been printed on both sides, some characters would have appeared in a normal orientation.

The reversed and rotated orientation of the characters suggests that the recto side of the printed paper and the painting were facing each other, and the verso side of the characters is visible through a thin layer of plant fibres in the paper.

The legibility of the traditional Chinese characters—not readily detected by VIS photography—was improved using the NIR technique. An enhanced contrast was achieved between the black print absorbing NIR radiation and brighter areas of the paint layer reflecting the infrared rays. Since traditional Chinese characters appear in a format known as vertical writing, the lines of text are aligned vertically in columns that are read from right to left, with each column starting from the top and proceeding downward. Unfortunately, translating the characters proved challenging due to print that was missing from the paper remnants. Nevertheless, it was possible to unravel certain characters that appeared on the farmer’s house on the left edge of the painting, as follows: 民 (mín), 智 (zhì), 書 (shū), 公 (gōng), 司 (sī), and 局 (jú) (Figure 6c). The probable translation of these characters is “Minzhi Bookstore Company”. An internet search revealed that Shanghai Minzhi Bookstore was a leading publishing company and bookstore established in Shanghai in 1921 [21].

Figure 6. Village scene with (a) the marked area of the remnants of the printed paper, (b) the corresponding detail photographed in VIS indicating the original orientation and poor rendering of the print containing the traditional Chinese characters, and (c) the NIR image of the same area, rotated 90° clockwise and flipped horizontally, displaying the enhanced rendering of the original print and the Chinese characters for reference (red). The probable translation of the characters is “Minzhi Bookstore Company”.

Another cluster of the traditional Chinese characters consists of 但 (dàn), 如 (rú), and 果 (guǒ) in the left column, 情 (qíng), 書 (shū), and 說 (shuō) in the middle column, followed by 怎 (zěn) in the right column (Figure 7a–c). Although the identified part contains illegible and missing characters, a probable translation is “but if/love letter says/how/why”. Although the information retrieved from the translation is limited, it might be possible to deduce that the passage was a part of some story or commentary.

Although some remaining groups of characters found in various parts of the painting have been identified, any interpretation of them would be speculative. Nevertheless, a group of the partially identified characters is presented in Figure 8a–c, and a group of illegible characters is presented in Figure 9a–c. Given the consistent orientation of the characters in one direction, it can be inferred that a single sheet of one-sided printed material was placed on the painting’s surface. This finding sparked curiosity regarding the reasons for and timing of the application of this printed material.
Another cluster of the traditional Chinese characters consists of 但 (dàn), 如 (rú), and 果 (guǒ) in the left column, 情 (qíng), 書 (shū), and 說 (shuō) in the middle column, followed by 怎 (zěn) in the right column (Figure 7a–c). Although the identified part contains illegible and missing characters, a probable translation is “but if/love letter says/how/why”. Although the information retrieved from the translation is limited, it might be possible to deduce that the passage was a part of some story or commentary.

Figure 7. Village scene with (a) the marked area of the remnants of the printed paper, (b) the corresponding details photographed in VIS indicating the original orientation and poor rendering of the print with the traditional Chinese characters, and (c) the NIR image of the same area, rotated 90° clockwise and flipped horizontally, displaying the enhanced rendering of the original print and the Chinese characters for reference (red). The probable translation of the characters is “but if/love letter says/how/why”.

The most likely reason for placing the paper over the paint layer would have been the need to protect it during storage or transportation. As the painting was completed in France in 1931, it is more plausible that Liu Kang would have used a local newspaper rather than one containing Chinese print. It is conceivable that, upon his return to Shanghai in 1933, he may have noticed the contamination of the paint layer of Village scene by other artworks and decided to protect the painting from further deterioration by putting the newsprint in place, without realising that the newsprint could stick to the artwork and cause damage as well. Although the paint layer was dry by then, it is possible that the paper could have stuck to it during prolonged storage under the weight of other artworks stacked on top of it. It is possible that Liu Kang continued to keep his paintings unstretched and tightly stacked in storage in Shanghai until 1937, when he was forced to move to Malaya due to the outbreak of the Second World War. It is unlikely that the storage conditions improved when the paintings were transported to Malaya by the artist Chen Jen Hao, who was Liu Kang’s brother-in-law and had decided to join him the same year [22]. Liu Kang continued to store most of his paintings from Paris and Shanghai unstretched until the twilight of his artistic career in Singapore [23]. It is reasonable to conclude that he removed the newsprint from Village scene, as he donated the painting to the NGS in 2003 in its current
condition. However, he was unable to completely remove the fragments of paper that were adhering to the painting’s surface.

Figure 8. Village scene with (a) the marked area of the remnants of the printed paper, (b) the corresponding detail photographed in VIS indicating the original orientation and poor rendering of the print with the traditional Chinese characters, and (c) the NIR image of the same area, rotated 90° clockwise and flipped horizontally, displaying the enhanced rendering of the original print and the Chinese characters for reference (red). Translation was not possible due to missing characters and illegible rendering caused by the poor print quality.
Figure 9. Village scene with (a) the marked area of the remnants of the printed paper, (b) the corresponding details photographed in VIS indicating the original orientation and poor rendering of the print with the traditional Chinese characters, and (c) the NIR image of the same area, rotated 90° clockwise and flipped horizontally, displaying the enhanced rendering of the original print. Identification and translation were not possible due to missing characters and illegible rendering caused by the poor print quality.

4. Ethical Consideration of the Conservation Treatments

The flattened impastos, which are contaminated with paint fragments from other artworks and remnants of the printed paper, may influence the aesthetic perception of Village scene, lead to misinterpretations of the artist’s technique, or suggest inadequate preservation attention. However, before any treatment is planned, it is crucial not only to study the nature and causes of the damage to the paint layer [24] but also to understand their correlation. It is therefore necessary to formulate possible conservation strategies for the painting, taking into consideration the relationship between these various factors.

The joint code of ethics of the Canadian Association for Conservation of Cultural Property (CAC) and the Canadian Association of Professional Conservators (CAPC) emphasises the importance of respecting the original artist’s intention: “The original intention, usage, history and evidence of provenance of the property must be respected” [25]. In light of the above, it is justifiable to consider the removal of remnants of the printed paper and inpainting of incrusted foreign paint fragments, as both constitute non-original additions that distort Liu Kang’s original artistic intention. Furthermore, the removal of the paper remnants could be justified to reduce the risk of a microbial attack of the porous surface created by the plant fibres.
An alternative, less invasive conservation strategy could involve preserving the non-original additions after evaluating their role in documenting the painting’s history. This approach is in line with Philippot’s perspective, which emphasises that such additions should be removed only if they lack historical or artistic significance [26]. Otherwise, their removal could affect the artwork “in its function as historical witness” [24]. In the case of Village scene, the damage and additions to the paint layer discussed above were unintentional; moreover, and paradoxically, the placing of the printed paper on top of the painting reflects the artist’s attempt to protect the paint layer and to prevent further deterioration. These three types of damage therefore provide a unique glimpse into the history of the painting, showcasing Liu Kang’s complex journey from Paris to Shanghai, Malaya, and, ultimately, Singapore. While the damaged areas may affect the visual aspects of the painting, Appelbaum points out that it is advisable to take into account not only personal preferences but also historical facts when evaluating its aesthetics [27].

Consequently, the main challenge of the task would be to strike a balance between improving the painting’s artistic cohesiveness and respecting its interesting history, as reflected in the areas of damage and non-original additions. Hence, selective inpainting of the remnants of the foreign paint material could be conducted in the highly disfigured areas. The unprinted parts of the paper could be removed to reveal the original paint underneath, while the remaining printed paper could be left untreated as evidence of the painting’s history. Therefore, it is crucial to consider these remnants in their historical context, as there is limited archival information about the artist’s painting practice in Paris and Shanghai [23,26–30]. Such an approach would be in line with the code of ethics of the United Kingdom Institute for Conservation of Historic and Artistic Works (UKIC), which advises conservators not to “undertake any treatment which is more extensive than necessary” [31]. A similar view, although not explicitly stated, is implied by the American Institute for Conservation of Historic and Artistic Works (AIC): “The conservation professional must strive to select methods and materials that, to the best of current knowledge, do not adversely affect cultural property or its future examination, scientific investigation, treatment, or function” [32].

As an additional preventive measure, the painting could be glazed to protect it from dust and reduce the risk of mould growth over the remaining plant fibres on the paint layer’s surface in Singapore’s tropical climate. As the print with the traditional Chinese characters would remain visible, the visual integrity of the artwork would not be fully achieved. However, the role of the curator would be to help the viewer to understand the unusual condition of the painting and to provide an appropriate labelling. As the complete restoration of the painting to its original state is not possible due to irreversibly flattened impastos, it may be worth considering the scenario of leaving the painting in its current state, with retained remnants of the newsprint and foreign paint fragments. This option would legitimise the areas of damage as an integral part of the painting and provide evidence of the complex history behind the artwork. Such an approach would attach equal importance to the historic context of the damage and the aesthetic properties of the artwork. This strategy is supported by the following statement by the AIC: “All actions of the conservation professional must be governed by an informed respect for the cultural property, its unique character and significance, and the people or person who created it” [32]. It is also in line with the code of ethics of the Institute of Conservation (ICON), which highlights the importance of “respect for the cultural, historic and spiritual context of objects and structures” [33]. To reduce the risk of dust accumulation and microbial attacks of the paper fragments, the appropriate solution would be to provide glazing to protect the surface of the painting and to monitor the environmental conditions under which the painting is displayed and stored. However, to mitigate the downside of this approach—the reduced visual integrity of the painting—the curator and conservator should provide the audience with accurate and truthful information. This approach could add new meaning to the artwork in being a piece of interesting history about Liu Kang and dispel misconceptions about his painting technique. Moreover, it could contribute to
building trust between the institution and the public, thus encouraging further exploration of the intriguing features of Liu Kang’s painting practice [14,34].

5. Conclusions

The combination of imaging techniques and archival search made it possible to gain an in-depth understanding of the condition of and history behind Village scene, one of the earliest of Liu Kang’s paintings. The investigation identified and characterised three types of correlated damage: flattened impastos, incrusted foreign paint, and paper containing printed traditional Chinese characters. It is likely that the damage to the impastos and the contamination of the paint layer occurred very soon after the painting was completed in France. However, the printed paper was probably applied to the painting in China between 1933 and 1937. Overall, the damage to the painting probably resulted from the poor conditions under which it was stored and transported in France and China. However, the remnants of the paper suggest that the artist intended to prevent further contamination of the paint layer. The NIR imaging was effective in improving the legibility of the print, which was not satisfactorily rendered in VIS photography. Certain and very limited information was retrieved, making it possible to infer that the printed paper either originated from the Shanghai Minzhi Bookstore or was a newsprint text containing commentaries and commercial advertisements.

In addition to providing a detailed characterisation of the areas of damage to the painting and tracing its history, the study examines the ethical considerations in the context of conservation and the approach to displaying the artwork. Three conservation strategies were formulated, taking into account the ethical guidelines formulated by various governing bodies in the conservation profession. The examination demonstrated that there is no universal conservation solution that can reconcile conflicting aesthetic and ethical opinions. Valid arguments can be made both in favour of restoring the painting to its original state and of retaining its current condition, with the areas of damage acknowledged as an integral part of its history. Good conservation practice would require balanced judgments from both the conservator and curator, taking into account the wider context of Liu Kang’s early artistic practice and the quality of the existing archival material from that period.

Further research could involve identifying the fibres from which the paper was made. Since the paper is believed to have originated from Shanghai, it would be interesting to determine whether indigenous plant fibres are present. Moreover, identifying the pigments found in the chunks stuck in the impastos and cross-referencing them with Liu Kang’s known pigment preferences in Paris and Shanghai [28–30,35] would enhance our understanding of the artwork that was placed over Village scene. In addition, analysing the reversed white ground fragments stuck in the impasto could yield valuable data. By comparing the chemical composition of these fragments with the known ground characteristics of Liu Kang’s paintings from his Paris and Shanghai periods [23], it may be possible to determine whether the painting that was placed on top of Village scene during storage was created in France or China.

Funding: This research received no external funding.

Data Availability Statement: The data presented in this study are available upon request from the corresponding author.

Acknowledgments: The author wishes to thank the National Gallery Singapore for allowing for the investigation of the painting; the Heritage Conservation Centre for supporting this study; and Gretchen Liu for sharing the artist’s archival photographs. The author acknowledges the assistance of Lucien Low and Anthony Lau (senior painting conservator from the Heritage Conservation Centre) in the translation of the Chinese characters. This paper is a part of the ongoing PhD research that focuses on the painting materials and working practice of Liu Kang. The research is supported by the Nicolaus Copernicus University in Toruń, Poland.

Conflicts of Interest: The author declares no conflict of interest.
References


21. Baidu Encyclopedia. Available online: https://baike.baidu.hk/item/%E4%B8%8A%E6%B5%B7%E6%B0%91%E6%99%BA%E6%98%B8%E5%B1%80/5118145 (accessed on 7 April 2023).


Disclaimer/Publisher’s Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.