# The art of 'looking': A technical analysis of Alexis Preller's *Man in the Sun*

**Mini-Dissertation**

**by**

**Daniéle Knoetze**

**Supervisor: Ms Maggi Loubser**

**Co-supervisor: Mr Karel Nel**

**Submitted for the partial completion of degree**

**MSocSci Tangible Heritage Conservation**

**in the**

**SCHOOL OF THE ARTS**

**FACULTY OF HUMANITIES**

**UNIVERSITY OF PRETORIA**

**DATE**

**24 October 2021**

# SUMMARY AND KEY TERMS

Title of dissertation: The art of 'looking': A technical analysis of Alexis Preller's *Man in the Sun*

Name of student: Daniéle Knoetze

Supervisor: Ms M Loubser

Co-supervisor: Mr Karel Nel

School of the Arts

Degree: MSocSci Tangible Heritage Conservation

The study aims to achieve a deeper understanding of the materials and techniques used by Alexis Preller in his early work, *Man in the Sun* 1936. A survey of the artist's materials and techniques is of great importance as this information can guide conservators so that appropriate conservation actions can be applied in the future. Furthermore, by investigating Alexis Preller's *Man in the Sun*, a greater appreciation and understanding of the painting's anatomy will be achieved. This work intends to examine and document the materiality and techniques used by Preller through the combination of various historical, visual, and analytical techniques. The analytical techniques used are a preferred response when dealing with the conservation of oil paintings on canvas, because of their non-invasive and non-destructive nature. These techniques include provenance studies, visual examination, technical photography, and X-ray Fluorescence. In combination, the techniques should reveal the materials and techniques Preller used in *Man in the Sun*.

Key words: Alexis Preller; art documentation; provenance studies; visual examination; technical photography; X-ray Fluorescence.

# Table of Contents

## LIST OF FIGURES

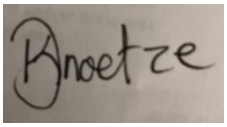
**Page**

# LIST OF TABLES

# LIST OF APPENDICES

# PLAGIARISM DECLARATION

I hereby declare that: *The art of 'looking'*: A technical analysis of Alexis Preller's *Man in the Sun* is my own original work, and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.



Daniéle Knoetze

24 October 2021

# ACKNOWLEDGEMENTS

I have been blessed with so many amazing people in my life. I would like to take this opportunity to thank a few of them.

My husband Daniel Knoetze
My parents, Marthé and Dean Marais
My brother Dean Marais
Maggi Loubser (supervisor)
Prof Lize Kriel
Karel Nel (co-supervisor)
Salomé le Roux
Grace Welsh
Sandra Markgraaf
Lucy Blumentha
Isabelle Mcginn (lecturer)
Laura Esser
Gerard de Kamper
Dirk Oegema

A very special thank you goes out to Mellon fund Foundation for providing the funding for my studies.

I am grateful for each and every word of encouragement and support. Thank you.

# CHAPTER ONE:

# THE ART OF 'LOOKING': A TECHNICAL ANALYSIS OF ALEXIS PRELLER'S MAN IN THE SUN

Key words: Alexis Preller; art documentation; provenance studies; visual examination; technical photography; X-ray Fluorescence.

## 1.1 Background and Aims of the study

This study will entail an in-depth study of the work *Man in the Sun* (Haremsen 1985:134) by Alexis Preller (1902 -1962). This work has a unique style and is clearly different from his later works. Understanding an artist's choice of style and technique and starting systematically at the beginning of his career can be a steppingstone towards a better understanding of his artistic growth.

This will be done due to the need for a more scientific investigation into the materials used by Preller in this work. As with many of South African artists, little or no research has been done on the materiality of their work.

Through investigating the physical characteristics of the painting, I will be attempting to achieve a deeper understanding of the artist's creative process and techniques. These factors manifest in the physical composition of the paintings and influence the artist's choice of material (Research and Technical Analysis [Sa]). The materials used, influence the manner in which the structure of painting changes over time (Institute…2017). A painting is not a mere visual representation, it is rather a complex structure composed of different elements (Hogarth [Sa]). The basic structure of a painting's layout is as follows: pigments are mixed in a medium (Egg Tempera, Drying Oil, Distemper or Encaustic) and are then applied to some sort of a support (canvas, board, metal etc.).

An in-depth study will be done to better understand the materiality of the work. This will be achieved through using provenance and visual examination plus analytical techniques to look 'inside' the painting's structure. These examinations will be done by using non-invasive techniques: technical photography and X-ray Fluorescence. These techniques will be discussed in more detail in the body of the work.

I will use these analytical tools to understand the nature of the materials and how they react with the environment around them. This information can guide conservators so that appropriate conservation actions can be applied in the future. By investigating Alexis Preller's *Man in the Sun*, a greater appreciation and understanding of the painting's anatomy will be achieved.

This study is important because it gives a more in-depth understanding of Preller's work, specifically the material science behind the visual representation. I will investigate the artist's techniques, as well as the materiality of the physical object, in order to gain more insight into the painting. The general problem is that South Africa has been on the back foot when it comes to implementing sophisticated analytical techniques on local artworks. Because of this, knowledge of how we need to look after our heritage has been neglected.

Due to the limited scope of a mini dissertation, the focus will be on one work by one artist. Through doing an in-depth investigation of Alexis Preller's *Man in the Sun*, conservation in South Africa can start building a bigger catalogue on Alexis Preller and his techniques. Over time, the methodology developed can be expanded to include more artists and their techniques. This catalogue can create a platform for conservators to gain insight when dealing with specific materials and their reaction to the environment the paintings 'live' in. This gives the discipline of heritage conservation the tools and guidelines needed to achieve correct preventative and remedial conservation of South African art and in return, uphold its heritage. This also enriches the field with information that will help to acquire in-depth knowledge of the artist's techniques and materials. Rather than being cherished for only their intangible qualities, objects must take on a new role. Heritage objects must also reflect the history of the material that composes the object.

Alexis Preller's paintings are an expression of an artist in a specific time and place. However, it is first and foremost a physical object that is composed of different materials. The research question therefore attempts to answer which materials and techniques he used in his canvas paintings at this stage of his career, when he was creating *Man in the Sun.*

### 1.2 Select Literature Review

Barni, M., Pelagotti, A. & Piva, A. 2005. Image processing for the analysis and conservation of paintings: opportunities and challenges. *IEEE Signal Processing Magazine* 22(5):141–144.

This article addresses the different image processing techniques used for analysing a painting. The article is a summary that focuses on the limitations and advantages of these applications.

*Know your paintings: Structures, Materials and Aspects of Deterioration*. [Sa]. [O]. Available:

https://www.canada.ca/en/conservation-institute/services/conservation-preservation-publications/canadian-conservation-institute-notes/know-your-paintings-deterioration.htmlstitute.

Accessed 20 February 2021.

The article sheds light on the physical structure of paintings. The information focuses on what materials are used and how these materials deteriorate over time. A step-by-step description of each section of the painting's structural composition is given with accompanying illustrations.

Berman, E. & Nel, K. 2009.*Alexis Preller: Africa, the Sun and Shadows and Alexis Preller: Collected Images*. Johannesburg: Shelf Publishing.

This book focuses on the life and works of Alexis Preller. The intensely personal life story is accompanied with snapshots of the artist's private life together with other illustrations. This book does in some cases mention what material Preller used. However, the focus falls on the life of Alexis Preller explained through a visual timeline of Preller's work.

Bezur, A. Lee, L. Loubser, M. & Trentelman, K. 2020. *Handheld XRF in Cultural Heritage.* Los Angeles: The Getty Conservation Institute.

This book focuses on the application of XRF on cultural objects. The authors discuss the advantages and limitations of the XRF in detail. Each chapter focuses on different art or archaeological materials. For the purpose of this study, I will primarily focus on chapter for: *Handheld XRF for the examination of paintings: proper use and limitations*.

Casini, A., Lotti, F., Picollo, M., Stefani, L., & Buzzegoli, E.1999. Image spectroscopy mapping technique for non-invasive analysis of paintings, *Studies in Conservation*, 44(1):39–48.

The article focuses on image spectroscopy and its implementation on painting analysis. The case study focuses on revealing different pigments of a sixteenth-century panel painting to support the findings**.**

Deichmann, J.R. 1986. *Die Werke van Alexis Preller 1934-1948 en n Catalogue Raisonné.* Pretoria: University of Pretoria.

This is a dissertation focusing on the works of Alexis Preller from 1934 to 1948. The writer investigates biographical information of Preller, the influences on his art and written material on anything related to Preller and his work (books, magazines, letters etc.). The writer also gives a comprehensive list of known artworks by Preller. The author does touch on what material Preller used in some of his art works, however, this is not the focus of the book.

Ferretti, M. 1993. *Scientific investigations of works of art*. Italy: InterStampa.

This book discusses a variety of analytical and structural methods used when investigating works of art. These methods are discussed in terms of their physical principles, features and limitations in the field of conservation science.

*Gateways to Art*. 2012. New York: Thames & Hudson Inc.

The book focuses on how to look at the composition of an artwork. The aim of the book is to teach you how to 'read' a painting, through formal analysis and the symbolism behind the visual representation.

Research and Technical Analysis. [Sa]. *Art Conservation International*. [O]. Available:

http://artsconservationinternational.com/en/rechisches-et-analyses-scientifiques/

Accessed 21 February 2021.

This article offers a summary with illustrations of some analytical techniques and research methods that can be applied when investigating a heritage object.

Jordanova, L. 2009. *The look of the past: Visual and material evidence in historical practice.* Cambridge University Press: Cambridge.

Ludmilla Jordanova investigates the impact of the visual world (objects, buildings, photographs, and paintings) and how it impacts society. The author focuses on the idea of a 'visual language' and how this is necessary in order to make sense of the past, present and future.

Kirst, A. & Levenson, R.S. 2000. *Seeing Through Paintings*: *Physical Examination in Art Historical Studies*. Yale University Press: New Have.

This book discusses the physical examination of paintings. It gives the reader greater insight into the physical structure and historical context of selected easel paintings. The authors focus on the materials used as well as the techniques applied. The findings are shown through case studies of numerous Western easel paintings.

Ocon, N. [Sa]. *A Primer for the Materials, Methods and Techniques of Conservation*. [O]. Available:

https://ncartmuseum.org/images/uploads/conservation-primer.pdf

Accessed 18 February 2021.

The author discusses the structure of a painting and all the elements that contribute to the final visual representation. All the materials that are used to produce a painting and the impact these materials have on one another is investigated.

Ogilvie, G. & Graff, C. 1988.*The Dictionary of South African Painters and Sculptors, Including Namibia*. Johannesburg: Everard Read.

This catalogue is an archival document of South African and Namibian artists that contributed in shaping South African and Namibian identity and heritage.

Mayer, R. 1970. *The Artist Handbook of Materials and Techniques*. New York: The Viking Press.

This book is used for practicing artists as a handbook for understanding the materials and tools used in specific mediums such as painters, printmakers, and sculptors. This step-by-step guide grants more insight into the process, chemistry, and colour theory behind the creative process of making art.

Poliszuk, A. & Ybarra, G. 2014. *Analysis of Cultural Heritage Materials by Infrared Spectroscopy, in Infrared Spectroscopy: Theory, Developments and Applications.* New York: Nova Science Incorporated.

The authors focus on the importance of material science and how the application of new technology has opened a door for proper treatment of cultural objects. These analytical techniques grant the ability for the identification and characterisation of materials. The implementation of techniques such as spectroscopy will shed some light on material degradation and conservation strategies will thrive.

Sackler, A.M. 2005.*Scientific Examination of Art: Modern techniques in conservation and analysis*. Washington: The National Academy Press.

The main focus of this book is conservation science, its evolution, history and contributions to the field. The book is composed of a collection of articles from different authors and their different case studies. The cultural artefacts and the material science behind these case studies are investigated.

Stoner, J.H & Rushfield, R. 2012. *Conservation of Easel Paintings.* New York: Routledge.

This textbook will be used as a guideline when investigating easel paintings. The authors focus on the history, material science and methods of treatment in both a practical and theoretical manner. The book is composed of numerous studies by different authors. These studies will help me achieve a holistic collection of data on paintings and methods and its documentation.

Stuart, B.H. 2007. *Analytical Techniques in Materials Conservation.* West Sussex: John Wiley & Sons.

This book is an introduction to a variety of analytical techniques. It explores the different methods in various case studies. The aim is to assist in choosing an appropriate analytical approach when dealing with material and the conservation thereof.

Taft, W.S. & Mayer, J.W. 2000. *The Science of Paintings*. New York: Springer-Verlag.

The authors focus on the interdisciplinary nature of understanding paintings and their structure. The relationship between art and science grants insight into the physical

properties of a painting. These applications develop an understanding of the techniques and materials used by the creators of the paintings.

In chapter two I used Berman and Nel (2009) and Deichmann (1986) as my main sources for the biographical section of the work. These authors concern themselves with the works and life of Alexis Preller. Through studying his paintings and noting how his style changed during his career, they were able to better understand the artist's intent. My study aims to use the historical information available and applying it to the investigating into what materials and techniques Preller used for Man in the Sun.

In chapter three and four I focused on the visual examination and documentation of

Man in the Sun. The works of Kirst & Levenson (2000), as well as Stoner & Rushfield (2012) and Taft & Mayer (2000) were used as my main sources. I applied the gathered information to better understand the materials and techniques Preller used. Hackney (2020) and Folch's (2011) works assisted me in understanding what to look for to determine the condition of Man in the Sun, 1936. The information also helped me to identify areas of deterioration and why it occurred.

For the section on technical photography, I used Frey, Heller, Kushel, Vitale, & Weaver (2008). This helped me to create a structured game plan for starting with the investigation and made it clear what I had to look for. In addition, to perform a more scientific investigation into the materials used, Bezur, Lee, & Loubser (2020) Trentelman, Bezur & Sperber (2016) and McGlinchey (2012) assisted me in understanding the process of doing the XRF analysis and understanding the data findings collected.

### 1.3 Theoretical Framework and Research Methodology

This research primarily makes use of scientific methodologies. Besides the condition reporting, the various methodologies will be explained below. I will begin the documenting process through a detailed condition report, starting with an in-depth investigation of the artist and the 'life' of the work. This research will help determine the materiality of the physical object. These findings aim to frame the artist in a broader South African context. Provenance is essential to any artwork; however, for many local artists these documentations have never been done.

Turning to archival research as well as looking into exhibition catalogues of Preller's work will grant more insight.

A visual examination will reveal any visible markings or other identifying features of the painting (composition, colour, line, form, pictorial space, tone and/or texture). With the use of magnification one can easily gather more evidence regarding surface finish, degradation, and the means of production of the work. I will observe the painting closely, looking at the physical characteristics, specifically at evidence of manufacturing details and signatures or dates that might grant more information about the work. Visual examination or imaging analysis (Rizzutto *et al.* 2015) also includes the use of visible light (the range of electromagnetic radiation that elicits a response from the human eye). I will use different aspects of visual examination to study the paintings; all of these steps will be documented to support my findings:

- Normal illumination

When investigating paintings, starting with observation with the naked eye under normal light, is the first step. This forms the basis for the entire investigation and enables me to make the appropriate choices regarding how to proceed with further analytical study (Martin 2007).

- Raking light

Raking light is a technique in which the painting is illuminated from one side only, at a slanting angle relative to its surface. Raking light is used to reveal a painting's surface texture. A surface that has areas of raised paint facing the light is illuminated, and those areas facing away, create shadows. This method is used to determine the current state of the painting in relation to its degradation etc.

- Transmitted illumination

This involves the placement of a light source behind the painting in order to reveal any faults, cracks or other concerns.

- Specular illumination

Specular illumination involves lighting an object at an angle and looking at it from the same angle, but from an opposite direction. It is ideal for paintings with gleaming paint or varnish layer.

- Ultraviolet-induced visible fluorescence

The ultraviolet light exposes the chemical elements of pigments, binders and varnishes through a visible glow in fluorescent colours. Each different colour is indicative of a specific element. This makes it possible to categorize a wide range of pigments and varnishes. Ultraviolet light can also make later restorations clearly visible as they fluoresce in a distinctly different manner as the original paint layer.

- Microscope

Magnification helps the conservator to identify specific areas of an object that needs further analysis. It enables one to clearly see marks, scratches and other faults on an object. Magnification enables the conservator to gather information about the texture and colour of the object.

- X-ray fluorescence spectroscopy (XRF)

Finally, I will investigate the characteristics of the materials used through X-ray Fluorescence Spectroscopy (Desnica & Schreiner 2006). These analyses and the documentation thereof will assist me in doing an in-depth investigation on the selected paintings and its 'anatomy'.

This non-destructive technique is especially useful for analysing inorganic materials. X-rays generated by the instrument excite atoms by ejecting an electron near the nucleus. The atom returns to the ground state by a cascade of movements by electrons, which jump from farther away from the nucleus to fill the vacancies. This relaxation process results in the emission of x-ray photons (secondary or fluorescent x-rays) with energies characteristic of the atom (Bezur, Lee, Loubser & Trentelman 2020). It is thus an elemental technique.

XRF can be used for the inference of pigments and from which level in the painting they originate.

- Establishing timelines for objects based on terminal date(s) of pigments or other materials
- can sometimes be used to identify areas of restoration

As can be seen from the above, this proposed study is using a mixed methodology which is mostly scientific. I will examine and collect data through a practical approach and by documenting the findings. Thorough research and examination will grant me insight into the materials and techniques employed by Alexis Preller in the early stages of his career.

### 1.4 Feasibility and significance of the study

The Pretoria Art Museum collections are in the public domain, and therefore easily accessible to the researcher. Permission has been granted by Mr. Dirk Oegema, Functioning Head: Museum Services.

Doing a material analysis using scientific methods is nothing new in Europe and the United States (Rizzutto et al. 2015). These techniques have been applied to paintings for decades but, for South African heritage conservation, this is a new platform to grow knowledge surrounding local artists and their use of materials. Because Alexis Preller played such a significant role in the South African art world and abroad, this mini-dissertation will most likely be one of a number of new researches done on Preller's work. As this is a mini-dissertation, the research is confined by the limited scope, but it might nevertheless be significant for further research into Preller's work.

### 1.5 Preliminary outline of chapters

Chapter 1 – The proposal and introduction to the study.

Chapter 2 – This chapter will focus on biographical information of Alexis Preller and his 1936 work *Man in the Sun*.

Chapter 3 – In this chapter I will begin the documenting process through a detailed condition report, starting with an in-depth investigation on the selected artworks. This is done through implementing the chosen theoretical approach and research methodology (documentation, provenance studies and visual examination).

Chapter 4 – This chapter goes beyond what can be seen on the surface and focuses on the structural layers of the artworks (the materiality of the work). The selected artwork will be examined and analysed through employing Technical Photography and X-Ray Fluorescence Spectroscopy (XRF).

Chapter 5 – In the concluding chapter a brief summary of the previous chapters and an examination of my findings will be discussed and will hopefully answer the research question: the materiality and techniques used by Alexis Preller in the early stages of his career. This chapter will conclude with the limitations it has and suggestions on further research that can contribute to the field of conservation in South Africa, especially moving to Preller's later works with a very different style and technique.

# CHAPTER TWO:

# BIOGRAPHICAL INFORMATION OF ALEXIS PRELLER, HIS TECHNIQUES AND STYLE

## 2.1 Introduction

This chapter focuses on the life, artistic style, materials used and iconography of Alexis Preller. Further focus will be paced on his exhibitions, public commissions, and collections. The section regarding his artistic style, biography and iconography is based on literary research. The techniques and materials he used will be discussed in the subsequent chapters.

*Figure 1 Alexis Preller in his studio. Pretoria. Photographed by Richard Cutler Eliot Elisofon Photographic Archives, National Museum of African Art.*

In the visual timeline below a chronological ordering will act as a guideline to create a broad summary of Preller's life and some of the work he produced. In the subsequent section a more detailed look into Preller's life will be discussed. The purpose of this visual timeline is to show how the artist's style, techniques and use of materials changed over the years. Also evident is how his travels inspired his work. This visual timeline starts with the year he made *Man in the Sun* and ends with his return to his initial inspiration of Van Gogh in his final self-portrait.

## ALEXIS PRELLER

# VISUAL TIMELINE

- 1911-Born in Pretoria
- 1923-1927- Attends Pretoria Boy's High School
- 1928-1933-Employed by City Council, Pretoria
- 1934-Travels to London
- 1935-Travel to London, Berlin, Hamburg, Antwerp.
- 1935-Vistits on His Return to South Africa; Tentuan, Cairo, Mombasa, Zanzibar.
- 1935- First Exhibition.

Figure 2:
*Man in the Sun.*
1936. **Oil on Canvas.**
560 mm x 460 mm.

## 1936

- Inspired by Vincent van Gogh and Paul Cezanne.
- Holiday in Mpumalanga
- Meets fellow artists: Moses Kottler, Anton Hendrik, Willem Hendrik and Judith Gluckman.

Figure 3:
*Woman Carrying a Bowl.* 1936.
**Oil on Plaster.**
140 mm x 90 mm.

## 1937

- Travel to Paris
- On return to South Africa Preller paints in Swaziland and Zululand.

Figure 4:
*Still life with chair.*1937
**Oil on Canvas**
830mm x 690mm

Figure 5:
*Swazi Muse*. 1938.
**Oil on Canvas**.
560 mm x 510 mm.

**1938**

**1939**

Figure 6:
*Congo Figures*. 1939. **Oil on Hessian**.
635 mm x 800 mm.

- Travel to Belgian Congo.
- Stays at Lake Kivu, Goma and Nyamlagira.
- Returns via Lake Tanganyika and the Lualaba River.

- 1940-Joins the Medical Corps.
- 1941- Departs to Egypt via the East Coast of Africa (Helwan, Mersa Matruh and El Alamein).
- 1942- Prisoner of war in North Africa, Tripoli, Benghazi.
- 1943- Prisoner of war in Capua/Naples, Fara Sabina/Rome.
- 1943- Deported to Egypt, Cairo, Suez.
- 1943-Returns to South Africa via East Coast of Africa.

**1940 – 1943**

**1944**

• Exhibition held in Johannesburg displaying 'war paintings'

Figure 7: *Fleurs du Mal*. 1944.
**Oil on Canvas**.
490mm x 1170mm

## 1945 – 1948

- 1945- Exhibition in Johannesburg.
- 1946- Exhibition in Pretoria.
- 1946-Travels to Paris, France.
- 1947- Travels to London
- 1947- Exhibition at the Christi's Gallery in Pretoria and Constantia Gallery in Johannesburg.
- 1948- Travels to Seychelles and on his way visits Zanzibar and Mombassa

Figure 8: *The Fishermen of Bel Ombre.*1949. **Oil on Canvas.** *610mm X 750mm.*

## 1949

- Seychelles exhibition in Johannesburg

## 1949

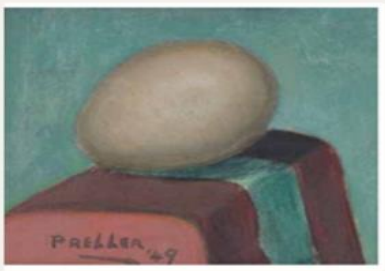


Figure 9: *The Egg*
1949
**Oil on Board**

## 1950– 1951

- 1950-Exhibition at the Vincent Gallery. Displaying a collection of small paintings done on wooden panels.
- 1951- Stays and paints in Pretoria.

## 1952

- Exhibition in Johannesburg.
- Subjects matter mostly focused on Mapogga studies.
- Exhibition in Pretoria; Christ Head and Collected Images.

Figure 10: *Three Women*. 1952.
**Oil on Wood**.
510mm X 410mm.

## 1953– 1955

Figure 11: *All Africa. 1953-1955.*
**Oil on Canvas**.
3000mm X 3000mm

## 1953 – 1955

- Exhibition in Cape Town.
- Accept mural commission All Africa
- ·Receives Molteno award
- Travels to Italy, studyiñg murals in Rome, Florence, Tarquinia, Siena, Arezzo, Vinice, Naples, Pompeii, Paestum.
- Travel to Egypt, Cairo Museum, Sakkara, Luxor, Karnak, Valley of the Kings for further studies
- Travels up the Nile to Khartoum

Figure12: *Woman with a Lyre'*. **Oil on Canvas.**
1520mm X 1220mm

## 1956

- Exhibition in Johannesburg at the Lidchi's Gallery

## 1957

Figure 13: *Grand Mapogga II*. 1957.
**Oil on Canvas.**
1005mm X 850mm

- Ndebele people, North of Pretoria is a constant source of inspiration

Figure 14: Under drawing of *The Discovery of the Sea Route Round Africa*. 1959-1962.
Oil on Canvas.
3000mm X 17250mm

## 1958

- Exhibition in Johannesburg.
- Displaying two versions of Grand Mapogga
- Start planning and doing charcoal under drawings for the mural commissioned for the Provincial Administration Building in Pretoria. Technical challenges.
- Builds his studio to accommodate the large scale painting

## 1959–1962

Figure 15: *The Discovery of the Sea Route Round Africa. 1959-1962*. **Oil on Canvas.**
3000mm X 17250mm

Figure 16: *Temple of the Sun* , 1963.
**Oil on Canvas**
1250 x 1360 mm

**1963**

**1965**

- Mural open for public viewing.
- Programme by Lourens Fourie broad cast on S.A.B.C.
- Preller's Twentieth Exhibition

Figure 17: *Golden Chariot (also known as Phaeton's Chariot).* 1967. **Oil and Gold Leaf on Gesso on Canvas**. 865mm X 1010mm.

**1967**

Start implementing gold leaf in his work.

**1968**

Travels to Greece, Turkey and Italy

**1969**

Figure 18: *Angel of the Lord.*
1969. **Intaglio-Oil on Fiberglass**.
830mm X 940mm.

Inspired by his travels he changed his technique to a more three dimensional style using oil on fiberglass as medium.

Exhibition at Lidchi's Gallery in Johannesburg

**1970**

- Exhibition at Lidchi's Gallery
  *The Tower and Marathon*

Figure 19: *Marathon I.* 1970.
**Oil and Gesso on Cloth**.
1220mm X 1370mm

## 1972

- Travel to Greece, Rome and Florence.
- Retrospective exhibition at the Pretoria Art Museum.

## 1973

Mostly work with intaglio. However, again turning to Post-Impressionism in his 1973 Final Self-Portrait

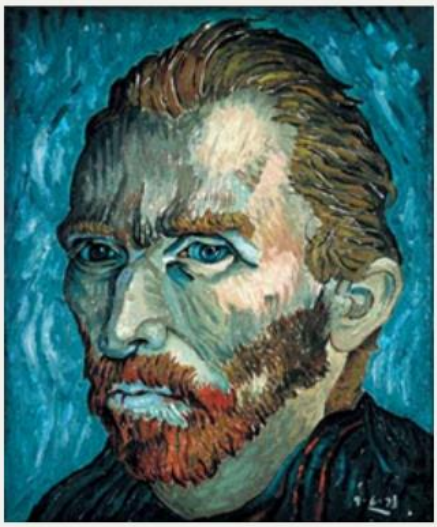


Figure 20: *Final Self-Portrait.*1973. **Oil on Canvas**

## 1974

Travels to Malawi, Seychelles and Europe

## 1975

- Twenty second exhibition at the Goodman Gallery in Johannesburg.
- Died of heart failure in Pretoria 13th of December.

*(Visual timeline, designed by author)*

### *2.2.1 Alexis Preller: Life of an Artist*

Alexis Preller (1911-1975) was born in 1911 in Pretoria, South Africa where he grew up and attended school at Pretoria Boys High. He worked as a civil servant before becoming a full-time artist (Berman & Nel 2009:12). Encouraged by a renowned architect and friend, Norman Eaton (1902-1966), in 1934 Preller went to London and enrolled at Westminster School of the Arts. It was here that he chose to become a painter. He returned to Pretoria in 1935, via the East coast of Africa. Preller was in constant search for inspiration, and this is perhaps why he so frequently visited destinations such as Swaziland, the Congo, and Seychelles (Alexis Preller Retrospective at the ISANG 2009).

His admiration for the Modernist movement abroad led him in 1937 to the Académie de la Grande Chaumière in Paris, even though this institution did not have the prestigious reputation as the former institutions he attended. Nonetheless, it provided artists a place to practice at a low. After staying in Swaziland (1937), where he would return to a few times during his career, he returned to South Africa (Ogilvie 1988:533). Preller was a founding member of the *New Group*[1] along with Gregoire Boonzaier (1909-2005) and Terence McCaw (1913-1978) and remained an active member in years to follow when they were branded as 'Cape Impressionists' (Alexis Preller South African, 1902-1962 [Sa]). In 1939 Preller travelled by car to the Congo later returning to Pretoria due to the outbreak of World War Two. It was during his travels to Congo that his fascination with tribal crafts and sculptures was born. Preller joined the Field Ambulance Corps during the war and was captured and detained in North Africa and Italy until 1943. On his return to Gauteng, he exhibited his war inspired paintings in an exhibition held in 1944 in Johannesburg, showcasing his move to a more surrealistic style in his works (Arcy Art Original Oil Paintings, South African Art, International Art[sa]). He returned to Europe in 1946, again visiting the museums for inspiration, this time focusing on Greek sculpture (Deichmann 1986:293). A collection of Preller's work and notes by Christi Truter was published in 1947 by Walter Battiss, showcasing some of his early works with biographical notes. Preller travelled to Zanzibar and the Seychelles during 1948 and 1949, gaining inspiration and again using the local traditions as personal expressions in his work. During this time Preller also became a member of the South African branch of International

[1] A group of like-minded artist, who aimed to move away from the more conservative style popular at the time in South Africa to a more French Impressionistic style (Berman 1970).

Art Club, along with other artists such as Irma Stern (1894-1966) and Walter Battiss (1906-1982).

In 1953, Preller travelled to Italy to study frescoes particularly the works of one of Piero Della Francesca (1415-1492). This was in preparation for his mural *All Africa* 1953-1955. Before returning to South Africa, he travelled to Egypt, Greece and Turkey that again helped form his vision for the mural. All these locations played an enormous role in the forming of Preller's artistic style. Preller found companionship with a young man named Guna Massyn. Massyn would later become an integral part of Preller's life and was the sole heir of Preller's work after his death in 1975.

His contribution to South African art was celebrated and in 1953, together with Jean Welz (1908-1975), when he received the Molteno Award. This was followed by the Medal of Honour for Painting in 1955 – awarded to him by the Suid-Afrikaanse Akademie. In both 1954 and 1955 he represented South Africa at the Venice Biennale. A retrospective exhibition of his work was held at the Pretoria Art Museum in 1972, the same year in which writer Esmé Berman (1929-2017) and Edgar Bolda made a documentary on his work, entitled *The World of Alexis Preller*. He was also a featured artist at the Sao Paulo Biennial in 1973, two years before his final exhibition in 1975.

Even though, he moved away from the style and techniques known to be used by both Van Gogh and Gauguin he stayed connected to them on a personal level. Preller continued to be fascinated by both these artist during his lifetime. Both these artist lives stories fascinated Preller, even before he knew their art (Bergman & Nel [Sa]: 257). Preller died of heart failure in Pretoria in 1975 (Alexis Preller Retrospective at the ISANG 2009).

### *2.2.2 His exhibitions, commissions and represented collections*

**Solo Exhibitions:**

- 1935 Glen's Upstairs Salon, Pretoria
- 1936 Leon Levson's Studio, Johannesburg
- 1936 Glen's Salon, Pretoria
- 1938 New Group Hall, Pretoria
- 1944 Gainsborough Gallery, Johannesburg
- 1945 Gainsborough Gallery, Johannesburg
- 1946 Macfadyn Hall, Pretoria
- 1947 'Twenty Paintings', Christi's Gallery
- 1947 Constantia Galleries, Johannesburg
- 1948 In his studio, 'Ygdrasil'
- 1949 Gainsborough Gallery, Johannesburg
- 1950 Galerie Vincent, Pretoria
- 1952 Gainsborough Gallery, Johannesburg
- 1952 Galerie Vincent, Pretoria
- 1953 HAUM Gallery, Cape Town
- 1956 Lidchi Gallery, Johannesburg
- 1958 Lidchi Gallery, Johannesburg
- 1962 Pieter Wenning Gallery, Johannesburg
- 1963 SAAA Gal, Polley's Arcade Pretoria
- 1965 Lidchi Gallery, Johannesburg
- 1969 Lidchi Gallery, Johannesburg
- 1972 Pretoria Art Museum, Pretoria
- 1975 Goodman Gallery, Johannesburg

**Exhibitions**

- 1935 Alexis Preller's first solo exhibition, Pretoria
- 1936 Empire Art Exhibition, Johannesburg
- 1938 New Group Exhibition, Cape Town and later exhibitions
- 1948 South African Art Exhibition, Tate Gallery. London
- 1952 Van Riebeeck Tencent Exhibition, Cape Town

- 1954 Venice Biennale
- 1956 Venice Biennale
- 1966 Republic Festival Exhibition, Pretoria Art Museum. Pretoria
- 1972 Prestige Retrospective Exhibition, Pretoria Art Museum. Pretoria
- 1973 São Paulo Biennale. Brazil
- 1975 Exhibition. Johannesburg
- 2009 Alexis Preller: Africa, the Sun and Shadows. Standard Bank Gallery. Johannesburg
- 2010 National Gallery. Cape Town

**Public Collections**

- South African National Gallery, Cape Town
- Johannesburg Art Gallery, Johannesburg
- Pretoria Art Museum, Pretoria
- Durban Art Gallery, Durban
- William Humphreys Gallery, Kimberley
- King George VI Gallery, Port Elizabeth
- Ann Bryant Gallery, East London
- Hester Rupert Museum, Graaff-Reinet
- Africana Museum, Johannesburg
- Rembrandt Art Foundation, Stellenbosch
- University of Witwatersrand Galleries, Johannesburg
- University of South Africa, Pretoria
- Sandton Municipal Collection, Johannesburg

**Public Commissions**

- 1953-55; commissioned to paint a mural *All Africa* for the Receiver of Revenue Building, Johannesburg.
- 1959-62; commissioned to paint a mural *Discovery of the Sea route Around Africa* for the Transvaal Provincial Administration Building, Pretoria.

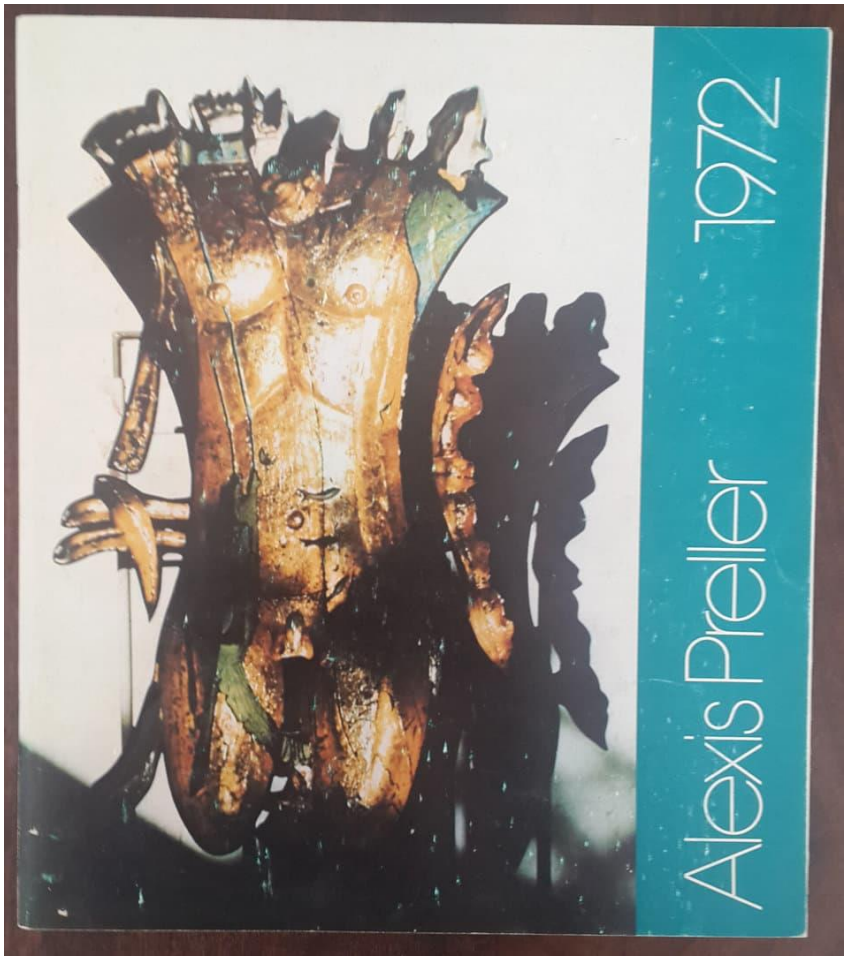



*Figure 21: Alexis Preller Retrospective Exhibition Pretoria Art Museum October 24 - November 1972. Photograph of Exhibition catalogue.*

### 2.3 Covering the bases

I will achieve a deeper understanding of Preller's techniques and creative process through investigating the physical characteristics of his painting *Man in the Sun.* As with all paintings, Alexis Preller's work is bound to the time and place in which he existed. If one keeps this in mind, it becomes clearer why he used the materials and themes he did. This chapter, and the subsequent chapters, will focus on the physical characteristics of *Man in the Sun.*

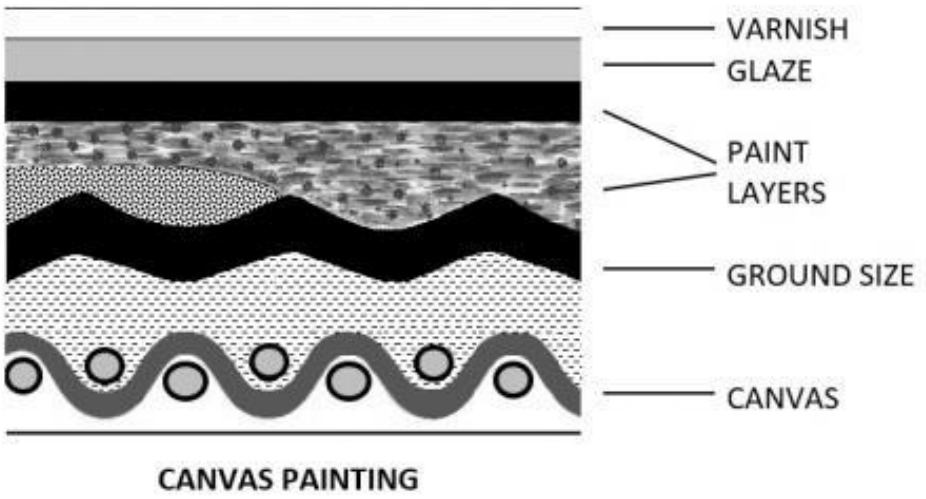



*Figure 22: The 'anatomy' of an oil painting on canvas. Western Australian Museum website.*

The canvas acts as support for the painting (Kirsh & Levenson 2000:28). This material has a distinct nature which determines its texture and how the painting looks (Taft & Mayer 2000:3). The canvas is usually prepared with thinned animal glue, this method is called size. It helps prevent paint, binders, and the varnishes from completely soaking into the support. It also fixes the canvas material in its wooden stretcher (Taft & Mayer 2000:4).

The size is covered, once again for protection of the support, by the ground or coating. This coating is usually made of acrylic polymers. The ground coating is commonly a white colour; however, some artists use other colours as a base (Kirsh & Levenson 2000:70).

Next the paint is applied. This is a mixture of pigments and binders that make the pigments stick, for lack of a better word, to the support. Mixtures of oils or resins can be combined with the paint to either make it more fluid or less fluid, which results in it drying faster or slower. Oil paint is extremely versatile in nature and is used by many artists because of its various advantages and flexibility as a medium.

Some artists also choose to apply varnish to their work. Varnishes are usually a blend of resin that creates a protective coat on top of the painted surface. After some time, depending on numerous inherent vices and environmental factors, the varnish dries. The matte or glossy finish it eventually has is due to the evaporation of the solvents and the oxidization of the polymers that form this protective film (Taft & Mayer 2000:5).

The varnish acts as a means to protect the painting from outside elements that would change its appearance. These elements include environmental factors such as moisture, pollution, and dirt (Taft & Mayer 2000:5). The varnish can also be as a way to give the painting either a matte or glossy finish. The choices that are made by the artist to use these specific materials determine how the painting will age over time.

## 2.4 Case study on Alexis Preller's *Man in the Sun* 1936

### *2.4.1 Style, themes, Iconography, and Influences*

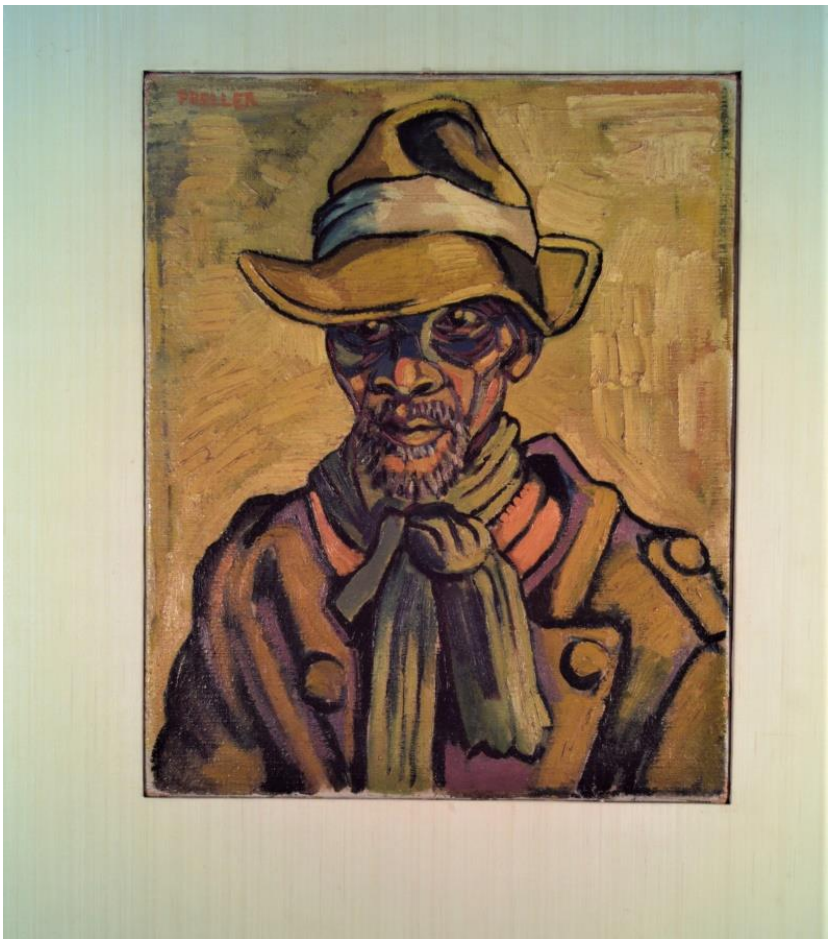



*Figure 23: Alexis Preller, Man in the Sun, 1936.Oil on Canvas, 560mm x 467mm*
*Pretoria Art Museum, Pretoria.*
*Photographed by the author.*

This work is deeply influenced by Post-Impressionist European artists such as Van Gogh and Gauguin. The term Post-Impressionism was coined by the British art critic Rodger Fry (1866-1934) and used in an exhibition title *Manet and the Post-Impressionists* in 1910. The term 'post' means after but can also refer to a revival. In other words, Post-Impressionism was a

reaction against Impressionism (Atkins 1993:170). Artists such as Claude Monet, Edgar Degas and Pierre-Auguste Renoir were branded as Impressionists. These artists are known for their everyday-life subject matter, visible brush strokes and their fascination with use of light. However, in the mid 1880's, artists like Paul Cezanne, Vincent van Gogh, Paul Gauguin and Georges Seurat were frustrated with the optical veracity of their predecessors (Atkins 1993:170). Now, the subject matter also aims to evoke to a more emotional representation with a strong use of descriptive and arbitrary colours and strong mark making, connecting with the viewer on a deeper level than just meets the eye. Edvard Munch stated that: "Nature is not only all that is visible to the eye…It also includes the inner pictures of the soul." This movement also gave way to later movements like Fauvism, Expressionism, Surrealism and Cubism.

Taking a closer look at Preller's *Man in the Sun* 1936, the Post-Impressionistic style and techniques are evident in every detail. For some historians the *Man in the Sun* is an undisputed response to Vincent van Gogh's *Patience Escalier* 1888, see figures 4 and 5. (Berman & Nel [Sa]: 3). Even though, this work is not an a-typical work viewers would associate with the artist, it is seminal as it was his first resolved work. This distinctive early work is important as it showcases Preller's boldness of approach. His painterly style in *Man in the Sun* is very different to his precision associated with his later works. With this work, he created his 'artistic language' through the use of form and colours, displaying an understanding and confidence in his draughtsmanship and technicality (Bergman & Nel [Sa]:3).

*Figure 24: Vincent van Gogh, Patience Escalier,1888. (Series) Oil on Canvas, 640 mm x 540 mm Pasadena, California: The Norton Simon Museum of Art.*

*Figure 25: Vincent van Gogh, Patience Escalier,1888. (Series) Oil on Canvas, 690 x 560 mm Private Collection.*

The composition of the work is decisively bold, with the figure filling most of the canvas. It is a half-length portrait of an elderly, farm worker who Preller met on a short holiday to Mpumalanga (Berman & Nel [Sa]:3). Portraiture, traditionally commissioned to capture the likeliness of the sitter or subject. However, this function was largely eclipsed or challenged by the development of photography in the mid-nineteenth century (Bird 2017:72). Artists such as Alexis Preller used this as an opportunity to capture not only the likeliness of the subject, but to convey the emotions and identity of the subject into art.

The man stares out of the canvas in worn, faded army-like coat, felt-hat with a white band and scarf tied around his neck. Both the scarf and the hatband are accentuated with the use of bright colours. In the scarf the orange and in the hatband the white draws the eyes to the gaze of the figures face. The plain yellow ochre background is interrupted by the strong black outlines of the man's silhouette as well as bright unconventional notes of colours in the scarf and coat, see figure 26. Preller used strong, vivid colours that are emotionally charged (Berman 1970:239). The seemingly flat background is likely evidence of Maggie Laubser's influence on Preller. The monotone backgrounds visible in *Man in the Sun* is in contrast to the influence of Van Gogh's busier background in *Patience Escalier* (Berman & Nel [sa]: 3).

The colours are dominantly black, yellow, white, green, purple, and orange. These unusual colour combinations create uneasiness in the painting; however, this is not the case in *Man in*

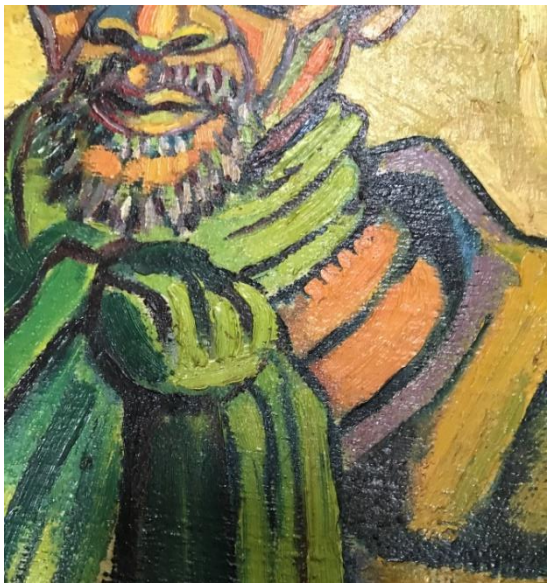


*Figure 26 & 27: Alexis Preller, Man in the Sun, 1936. Close-up photos of painting technique.*
*Oil on Canvas, 560mm x 467mm*
*Pretoria Art Museum, Pretoria. Photographed by the author.*

*the Sun* as the colours compliment the painting as a whole. The stylised curved shapes outlined, in black, give the painting a bare, abstract feel. However, the saturated tone in the man's face is painted in such a precise manner that it creates a figure full of expression and life. How Preller chose to articulate the figures futures in the specific organisation of forms, colours, and the relationship of positive-negative, makes this painting alive (Berman & Nel [sa]: 3). The figure seems to be emerging out of the muted background, outlined in bold, black brush strokes. The intense shadows are also done in darker tones. This juxtaposition of colours combined with the heavily textured brushstrokes in the figure and the plainer, yellow background leads to a dramatic effect. Also, worth mentioning, Preller used the muted yellow ochre background as a vehicle to translate the warm glow of the African sun (Berman & Nel [sa]: 3). The artist used an impasto technique (see figure 27) placing thick swathes of paint on the canvas, usually layered and then scraped with a tool (a bristle paintbrush, using fingers, a pallet knife or even straight out of the tube). This creates depth and texture (Harmsen 1985:43).

*Figure 28: Worktable in Alexis Preller's studio, Pretoria. Photographed by Richard Cutler. Eliot Elisofon Photographic Archives, National Museum of African Art.*

Staying true to the Post-Impressionistic influence, Preller uses artificial colours, saturated tones, stylised shapes and strong lines. The expressive broad brushstrokes give this painting a sense of motion and rhythm, which grants this portrait a sense of urgency. All these factors played on the idea that the artists did not wish to portray optical reality as accurately as possible, but rather a rich subjective view of it. The representation of daily activities is clearly evident in the work of the Post-Impressionists – capturing a sign of a moment. The 'art' lying in the manner these moments are represented through paint.

This work is partly reminiscent to Vincent van Gogh's *Finale Self-Portrait*, specifically the use of blue, yellow and the black outlines. The manner in which the almost flat background and shapes of the coat is juxtaposed with the busy brushstrokes used in the face is evident in both Vincent van Gogh and Preller's work.

> *"The first people that had sort of any influence on me at all were Van Gogh and Gauguin…. They're people that still interest me more than any other newcomer…"* Alexis Preller, 1966[2].

Within the modern art movement of the Nineteenth Century, the view regarding the role of the surface of the canvas changed. Now, the canvas surface takes on the character of its own. The paint is used to convey the artists emotions: the artist now exploits the medium (oil paint) to its full potential (Impasto…[Sa]).

> *"…I like to just push an awful lot of any particular colour that appeals to me at that moment"*- Alexis Preller, 1966 [3]

Other local artists who influenced Preller were African neo-expressionist Irma Stern and expressionist turned fauvist Maggie Laubser, although it is clearly visible that Stern had the bigger influence on him (See figures 29 and 30). Stern employed prolific, strong brushstrokes with thick and vivid colours to bring her imagined view of Africa to life. Her influence on Preller is especially evident on his earlier work, specifically the art he produced during his Swaziland period. Preller and Stern had a very similar charcoal drawing style both in terms of mood and artistic technique (Berman 1983:351).

[2] (Deichmann 1986:201).
[3] (Deichmann 1986:201).

The influence these artists (Preller, Laubser and Stern) had on each other can be seen in their use of colours, shapes, lines, composition, and subject matter. Again, the use of thick impasto techniques is impossible to miss. Alla Prima was also a paint technique popular amongst post-impressionists. This technique incorporated oil paint being applied directly to the ground of the canvas, in order to give the colours a more singular, pure effect. This technique made the brush strokes stand out separately instead of blending into each other (Harmsen 1985:42). These artists used colour not only as a pictorial element, but also as a means to express meaning and stimulate the viewer's senses (Bird 2017:72).

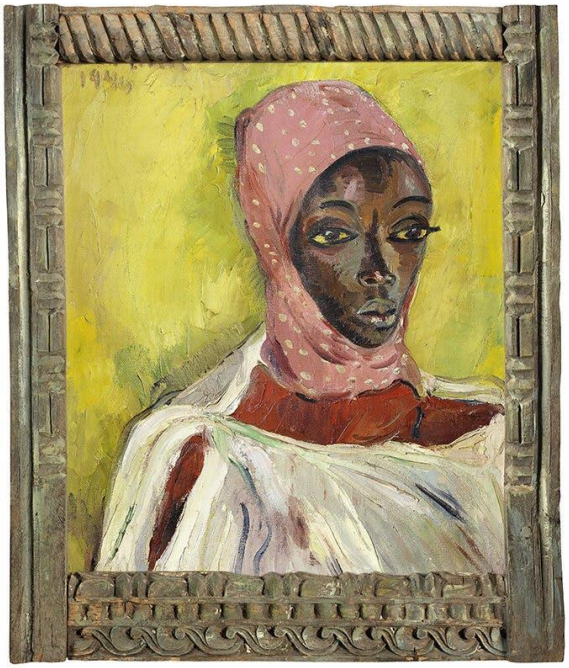


*Figure 29: Irma Stern, Watussi Chief's Wife, 1946.Oil on canvas in original Zanzibar frame. 63.2x50.5cm. Private US collection.*

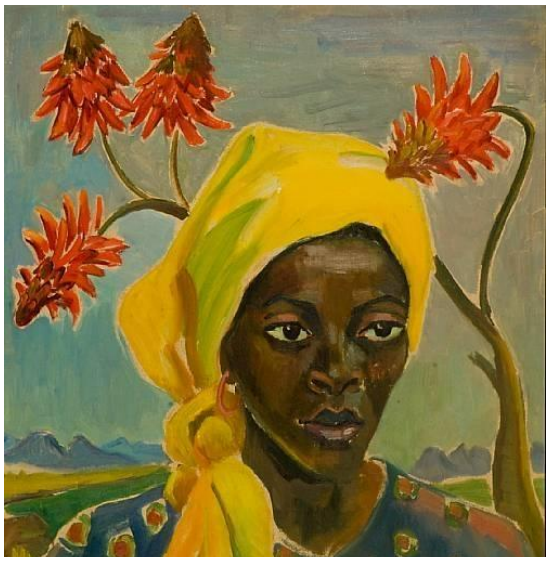


*Figure 30: Maggie Laubser, Annie of the Royal Bafokeng, 1945.Oil on canvas, 50 x 45 cm. Private Collection.*

Preller's works evolve dramatically over the years, working towards a great sense of precision with thinly applied oils paint later to the use of thick gesso applied to the surface of the canvas and finally, the large relief intaglio. Yet, towards the end of his life his first love for the techniques used by Van Gogh never faded. Significantly, in the 1973 *Final Self-Portrait* (figure 31) Preller almost identically copying Vincent van Gogh's *Final self-portrait* 1973 (figure 32) (Berman & Nel 2009:319).

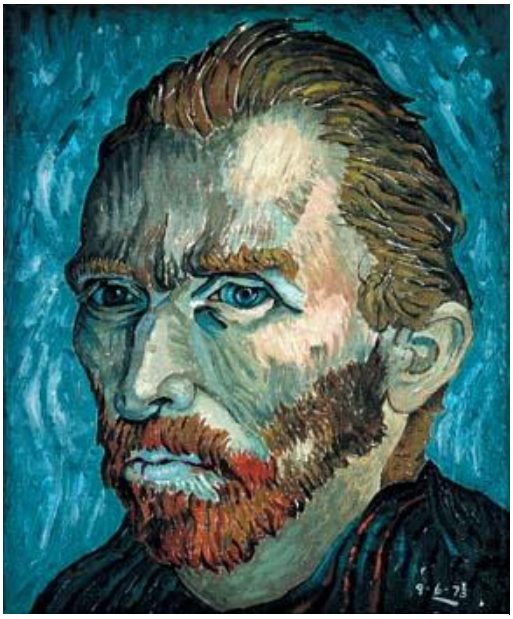


*Figure 31: Alexis Preller, Final Self-Portrait,1973. Unisa Collection.*

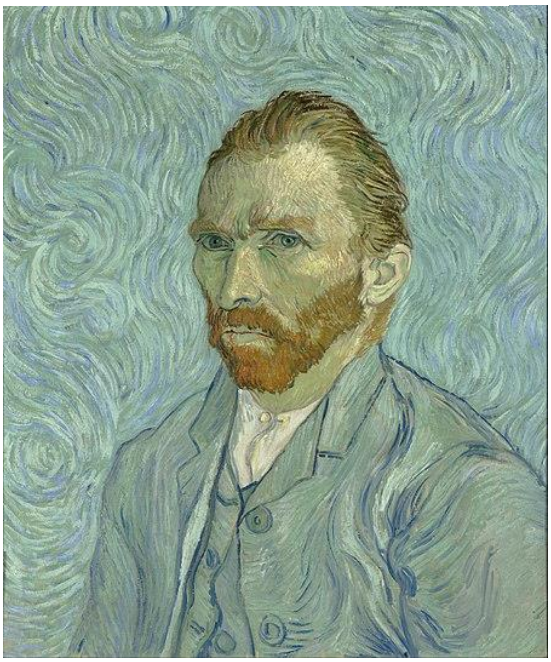


*Figure 32: Vincent van Gogh, Self-Portrait, 1889.Oil on canvas, 540 x 650 mm. Musée d'Orsay.*

## 2.5 Chapter Conclusion

*Man in the Sun* is unique as it stands out from the rest of the work by Preller we know and love: specifically, his use of bold colours that is broken by thick, black curved brush strokes. The impasto technique gives the painting rhythm and the juxtaposition of vibrant colours with dark shadows creates a dramatic feel. The detailed face of the figure that is built up by layers of different coloured paint creates an exaggerated expression on the man's face.

Understanding Alexis Preller's techniques and the materials he used in this work is important for future conservation and restoration. Knowing that this work was one of Preller's first, and that by the end of his career he turned back to this technique, his continued fascination with Post-Impressionistic methods is clearly significant.

# CHAPTER THREE:

# A DOCUMENTATION, PROVENANCE AND VISUAL EXAMINATION OF *MAN IN THE SUN*, 1936

## 3.1 Introduction

In this chapter I will begin the documenting process through a detailed condition report, starting with an in-depth investigation of the selected artwork. This is done through implementing the chosen theoretical approach and research methodology (documentation, provenance, and visual examination). Based on aspects observed with the naked eye an appropriate scientific technique will be identified and employed. The first step in this chapter is to investigate the artwork with the naked eye in order to document the empirical data of the artwork. Once observation without equipment is exhausted, the next step is to take a closer look with the help of magnification, microscopy, and different sources of electromagnetic radiation.

Through the layout of this chapter I will show, with the help of visual aids, that the findings of all of these methods used should not be seen as separate, but rather as a cohesive whole. This is because the combination of documenting with the naked eye, using microscopy and the application of UV light works together in order to form a proper analysis.

UV examination is an extremely helpful tool. Using a handheld UV lamp is an inexpensive and quick method when doing an analysis. This method helps determine a suitable approach to the next analytical techniques, as well as inform future conservation approaches. This method of examination is used to study the varnish layer. It reveals if the varnish was evenly applied, if retouches have been done and it shows the types of varnishes used. The use of technical photography in the next chapter will reveal that the painting was indeed varnished (Kirsh & Levenson 2000:222). It is also used as a tool in checking surface dust and dirt that cannot be seen with the naked eye.

Microscopy and magnification grant insight into the colour, varnish, surface condition, methods used and degradation of the painting. It also serves as a way to identify significant marks and textures on the artwork. (Stuart 2007:43). In regard to Preller's artworks, I used

these techniques to identify the aging and drying cracks, the surface status, the brushwork and overall condition of the painting (Cycleback 2017:129).

I also used the Munsell colour system to help identify the colour palette. This was greatly beneficial as this specific colour system creates a 3D model based on the five basic hues (red, green, yellow, purple, and blue). These colours are then organised according to their saturation and lightness. These three standards are respectively known as Munsell Hue, Munsell Chroma and Munsell Value (Johnston-Feller 2001:49).

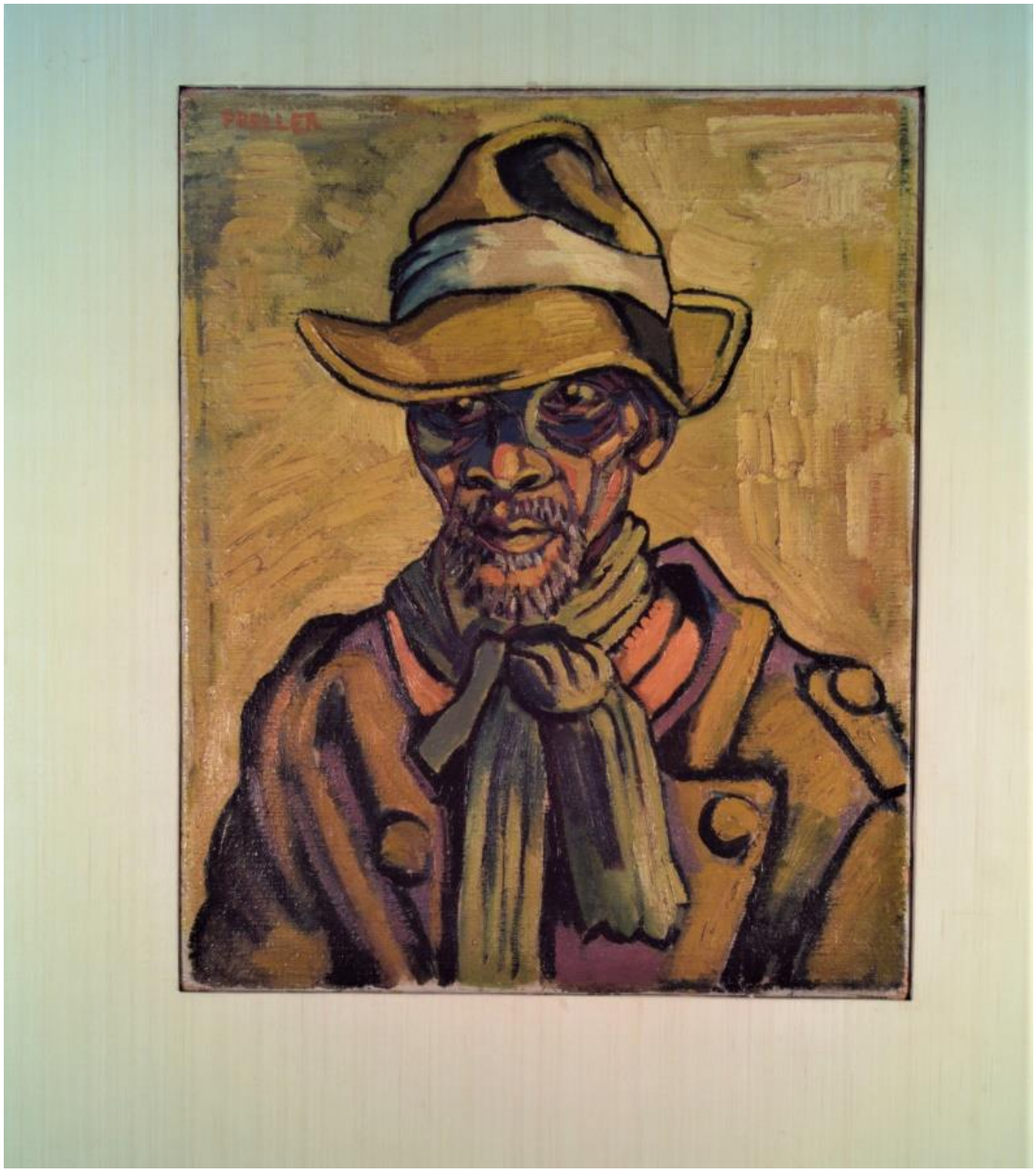


*Figure 33: Alexis Preller, Man in the Sun, 1936. Oil on Canvas, 560mm x 467mm*
*Pretoria Art Museum, Pretoria.*
*Photographed by the author.*

### 3.2 Empirical details

- Stock photograph: (Figure 33)
- Object asset number: 75/50
- Title: Man in the Sun
- Date: 1936
- Dimensions: 560mm x 467mm
- Materials: Oil paint on stretched canvas
- Techniques: Impasto techniques; heavily textured brushstrokes. Alla prima technique incorporated oil paint being applied directly to the ground of the canvas, in order to give the colours a more singular, pure effect. This technique made the brush strokes stand out separately instead of blending into each other. This technique also refers to wet-on-wet technique (paining over other layers of paint before it is dry). The paint was applied by both thick and thin brushes.
- Classification type: Impressionistic style.
- Short description: A portrait of a black man staring out of the canvas in an army-like coat, hat and scarf tied around his neck. The plain yellow ochre background is interrupted by the strong black outlines of the man as well as bright unconventional notes of colours in the scarf and hat.
- Signature/monogram: Like Van Gogh's work, the signature is done in paint on the left top corner of the painting (viewers perspective). The signature also gives the viewer information regarding the timeline of the painting. Preller changed his signature from written in capital letters (like Man in the Sun) to a more fluid style in his later work.
- Signature type: Painted on the left top corner "Preller" in capital letters.
- Acquisition method: Purchased by the Pretoria Art Museum in 1975 from J le Sueur for the retrospective exhibition held at the museum.
- Acquisition date: 4/9/1975
- Acquisition source: J le Sueur.
- Institution name: City of Tshwane, museum services.
- Institution sub body: Pretoria Art Museum.
- Institution address: Cnr of Franscis Baard and Wessels Street, Arcadia. Pretoria.
- Institution country: South Africa.
- Current location: Pretoria Art Museum.
- Current location type: In permanent exhibition.
- Condition classification: Fair.
- Condition date: 29/7/2021

### *3.3 The set-up*

Preparing the space where data will be collected is important, even when one is only doing a visual analysis. The first step was to create an appropriate space to work in. The research was collected and done in the storage facilities of the Pretoria Art Museum. This is ideal because as the light could be controlled and there were temperature and humidity meters in place. A large table was used to facilitate a proper working space. This was used for the laptop, handheld UV light, protective glasses, a USB Microscope, measuring tape, notebook, and photocopies of the painting to make notes on. It is crucially important to have a check list when working at an offsite location. This helps you not waste time by driving back and forth from locations. An H-frame easel and step ladder was provided by the museum. Placing the painting and securing it on the easel with the top and bottom canvas holder and wire tied to the looped screws (already on the frame) helped provide extra stability for the painting. I also used a clean, horizontal, flat surface for detailed inspection of both the back and the front of the painting. It is vital to properly handle a painting and to make sure that no harm comes to it when it is inspected during analysis. Once the space is safe and neatly organised, the visual analysis can begin.

A detailed visual examination is very important as this grants insight into both the condition of the painting and the techniques used by the artist. It furthermore reveals crucial details like the layers of paint used possible deterioration of the work and retouches and repairs that were previously done. Through the use of microscopes and other analytical techniques one is able to confirm the authenticity of the work (*Pigments Through the Ages* [sa]).

*Figure 34: Detailed visual examination. Pretoria Art Museum, Pretoria. Photographed by the author.*

## 3.4 Chemical and mechanical degradation and the effects on an object

A thorough understanding of the materials used, and their current state is needed in order to determine the condition of *Man in the Sun,* 1936. I investigated the main components, the cellulose structure and how the various stages of degradation of these might influence each other.

Deterioration can cause either physical or chemical changes to the painting. Physical change refers to the rearrangement of molecules that does not alter the chemical structure of individual molecules. Chemical changes refer to chemical reactions the causes the rearrangement of atoms in molecules, which results in new molecular structures being formed (Folch 2011: 31).

New substances are created through chemical change which in turn grants the material new physical properties (Rizzo & Burnstock 2003:49). Moisture, light, heat and air pollution hastens chemical degradation (Boersma, Brokerhof et.al 2007:21). Furthermore, the degradation of the canvas also influences chemical changes, which accelerates the general degradation of the painting (Folch 2011: 31).

Cellulose is commonly found on paper, wood, and other textile objects. This means that it would be present on the canvas of the painting as well (Mills & White 1987:73). As cellulose is a linear polymer built up from multiple glucose units, each cellulose unit is made up of two glucose units. (Garside & Wyeth 2006:61). Glucose is a monosaccharide that has six carbon atoms.

### *3.4.1 Introduction on chemical degradation*

Multiple degradation processes occur simultaneously; the most common of these processes are hydrolysis and oxidation. Both lead to scission and cross-linking of the polymer. These processes weaken and embrittle the material (Garside & Wyeth 2006:67).

Dependant on whether the environment is acidic or alkaline, different forms of degradation are predominant. Acidic environments facilitate hydrolysis while alkaline environments facilitate oxidation and alkaline degradation (Nevell & Zeroniam 1985). Other environmental factors, like heat, moisture, light and pollutants, can also accelerate the degradation process (Erhardt & Mecklenburg 1995:250).

#### 3.4.1.1 Hydrolysis

Hydrolysis refers to the chemical breakdown of compounds due to their reaction with water. Cellulose can be subject to both acid-catalysed hydrolysis and alkaline hydrolysis. Both processes break the cellulose chains and results in depolymerisation (Folch 2011: 28).

#### 3.4.1.2 Acid-catalysed hydrolysis of cellulose

When dealing with chemical degradation, acid-catalysed hydrolysis is one of the most concerning processes that occurs. It creates macromolecules with a lower degree of polymerisation and produces simple organic acids and aldehydes as a result (Strilic & Kolar 2005:34). The cellulose chain breaks down at random points which cause the material to become more brittle (Rizzo & Burnstock 2003:49). Acid-catalysed hydrolysis is particularly concerning in terms of the glycosidic bond of the material (Folch 2011: 27). The degradation process is affected by the strength and concentration of the acid. Temperature and the rate at which the reaction occurs also play an important role. Cellulose will degrade more quickly when exposed to acidic conditions. This is defined as a catalyst as it hastens the reaction rate without being consumed: acid is consumed in the first step and then released during the final step (Folch 2011: 27).

#### 3.4.1.3 Alkaline hydrolysis of cellulose

The glycosidic bond is also affected during alkaline hydrolysis. This occurs at the end of the chains and moves on one unit at a time. This means that this process does not cause as much degradation as acid hydrolysis to the material (Garside & Wyerh 2006:69). Prior damage to the cellulose can cause more rapid degradation.

#### 3.4.1.4 Oxidation

Oxidation occurs when a molecule is chemically combined with oxygen. Autoxidation refers to atmospheric oxidation of organic materials. Cellulose, while being mostly safe from autoxidation, will deteriorate over time, especially in the presence of light (Mills & White 1987: 73). Oxidation causes the material to become more brittle and can cause it to discolour (Garside & Wyerh 2006:68).

### *3.4.2 Introduction on mechanical degradation*

Materials can also degrade when exposed to physical-mechanical force. This could occur due to stretching, tension and pressure (Mozir, Strlic et. al. 2011:21). Canvas paintings are exposed to constant weight and pressure which leads to folding lines and deformation. This is often most evident near the structural support of the painting. Different layers of the painting are more susceptible to degradation than others: these depend on the materials used and their respective reactions to humidity and temperature. The canvas and glue layers are more susceptible to change due to humidity than the paint layers, which are more prone to damage caused by temperature (Folch 2011: 31).

Cellulose degradation can occur due to a large number of factors. These include, but are not exclusive to, heat, light, pollutants, moisture, and microorganisms.

#### 3.4.2.1 Heat

Heat causes the atoms and molecules to move at a higher speed which increases their risk for collision and chemical reactions. This means that heat accelerates all chemical degradation (Folch 2011: 31).

#### 3.4.2.2 Light

Cellulose oxidation is caused by light. This is especially true for light that contains the UV part of the spectrum. This causes the material to yellow and become more brittle. The material used in this canvas (jute) is especially susceptible to degradation due to UV light exposure. (Folch 2011: 32) Canvas paintings are usually protected by glass and a backing board, but this was not true in this case. This means that the canvas is excessively exposed to light (Folch 2011: 32).

#### 3.4.2.3 Pollutants

Nitrogen (78%) and oxygen (20.9%) are the main gasses found in air. It also has other gasses in smaller quantities which include argon (0.93%), carbon dioxide (0.03%), water vapour in variable quantities (0-7%), ozone and nitrogen oxides. Dust particles and microorganisms are also present (Folch 2011: 32). When a painting is appropriately covered and stored it obstructs the air circulation and decreases the exposure to pollutants, which in turn slows down the degradation process (Hackney 1984:109).

#### 3.4.2.4 Moisture

Extreme levels of humidity can cause increased degradation of materials. When the RH conditions are moderate (45-65%), water can be absorbed by cellulose in the polymer (Garside & Wyerh 2006: 67).

#### 3.4.2.5 Biological attacks

Cellulose is very susceptible to biological deterioration when exposed to high humidity levels, warm temperatures, and incorrect air circulation. Microorganisms can eat part of the cellulose away and they produce by-products that are often acidic and coloured. This means that apart from the obvious physical damage they can cause, they can also cause chemical deterioration. (Folch 2011: 33).

## 3.5 Physical characteristics

A paintings surface translates the artist's ideas. However, objects and their structures inevitably change over time. A painting's surface changes and in some cases the whole body of the object can transform (Pye 2001:94). Therefore, it is important to understand that change in the structure of an object must be investigated and understood through analysing the materials. The idea is to manage change as it cannot be brought to a complete stop.

#### 3.5.1.1 Support and Stretcher

The canvas stretched over a wooden frame support and stabilised with wooden keys in each corner. This canvas has an open weave, which means that the material is loosely woven (see figure 35). This grants the structural integrity of the support a more unstable character than a tightly woven canvas. The weft alternates over and under the warp; this is called a 'tabby' or 'plain' waved canvas (Hackney 2020:30). Artists such as Van Gogh and Preller (in this specific painting) were interested in the aesthetic, textured surface that a coarser material could provide. Burlap, also known as hessian, was an inexpensive canvas material that could achieve this desired surface effect. However, as can be seen with *Man in the Sun* 1936, this canvas is degrading with age because of its material nature (see figure 35). The properties of the hessian material present structural and aesthetic problems over time (see figure 37) (Hackney 2020:11). Also, deterioration caused by change in temperature or humidity is also more likely to occur due to the nature of the material that is made from natural fibres. This fluctuation in the

environment causes the material to absorb and release moisture, leading to delamination of the ground layer and, in this case, cracking of the paint layers.

*Figure 35: Alexis Preller, Man in the Sun, 1936. Microscopic view of canvas thread. Oil on Canvas, 560mm x 467mm. Pretoria Art Museum, Pretoria. Photographed by the author.*

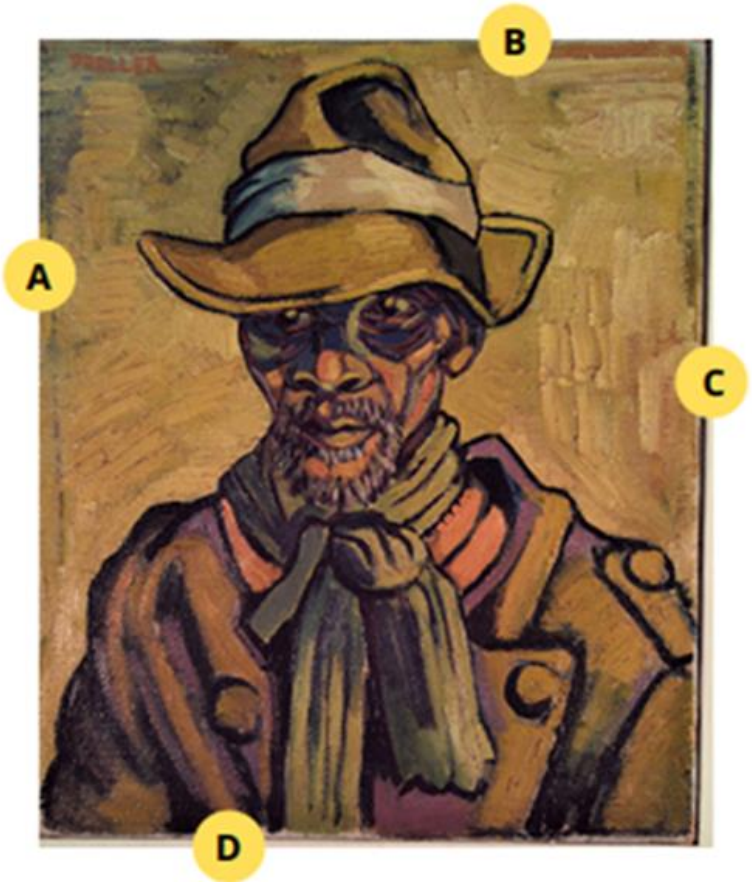



*Figure 36: Alexis Preller, Man in the Sun, 1936. Reference photo for figure 37. Oil on Canvas, 560mm x 467mm. Pretoria Art Museum, Pretoria. Photographed by the author.*

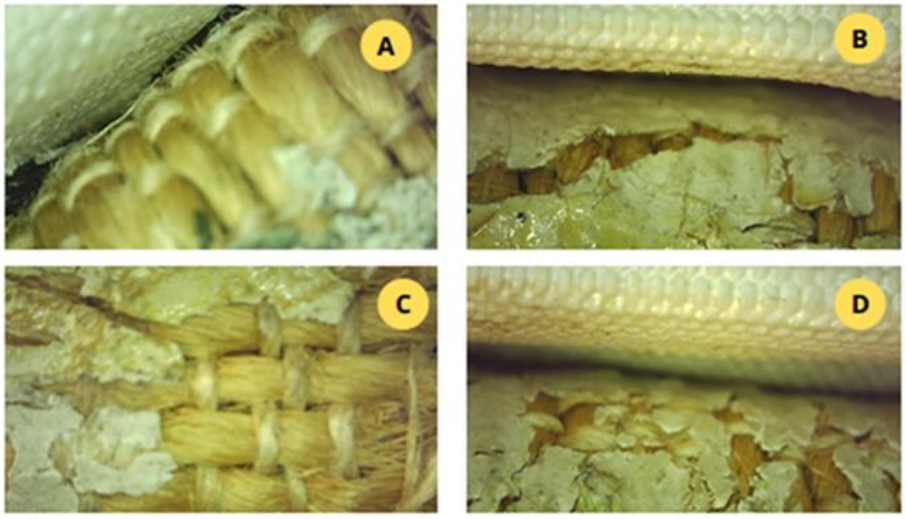



*Figure 37: Alexis Preller, Man in the Sun, 1936. Microscopic images of canvas weave and delamination of ground layer. Oil on Canvas, 560mm x 467mm. Pretoria Art Museum, Pretoria. Photographed by the author*

There are two metal brackets; one on top and one at the bottom of the canvas (see figure 38). The brackets are used to secure the canvas in the frame and as a means to hang the painting. There are also two screws with a looped heads attached into the frame on both sides. There are numerous nails on all four sides of the canvas securing the support onto the wooden frame. These nails are in no particular order and are in fair condition, with no signs of rust. However, tack holes are also evident on all four sides. This tacking margin suggests that the stretcher is not the original and may have been re-stretched. Different nails are used to secure the canvas on the stretcher; tack nails (short with a flat head) and finish nails (longer thinner nails). The finishing nails protrude out and pieces of material are used between the frame and the nail to protect against abrasion (see figure 40&41). The wood stretcher is in good condition with no signs of mould or insect infestation.

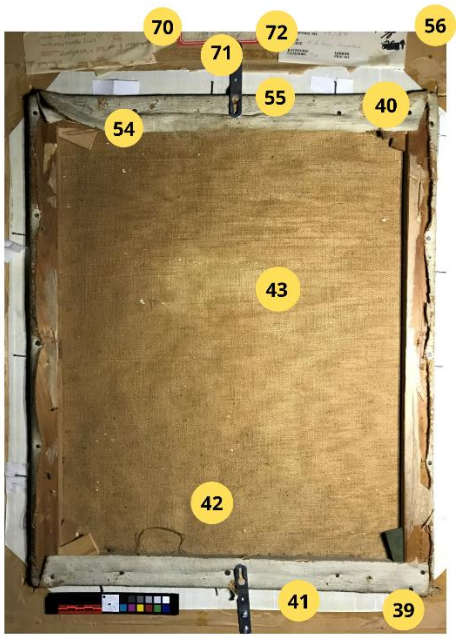



*Figure 38: Verso view of Alexis Preller, Man in the Sun, 1936. Reference photo of figure 39 -43, 54-56 & 70-72. Pretoria Art Museum, Pretoria. Photographed by the author.*

*Figure 39: Verso view of Alexis Preller, Man in the Sun, 1936. Close-up photo of damage. Pretoria Art Museum, Pretoria. Photographed by the author.*

*Figure 40: Verso view of Alexis Preller, Man in the Sun, 1936. Close-up of nails in canvas. Pretoria Art Museum, Pretoria. Photographed by the author.*

*Figure 41: Verso view of Alexis Preller, Man in the Sun, 1936.Close-up photo of adhesive under UV light. Pretoria Art Museum, Pretoria. Photographed by the author.*

The painting has no backing or liner. However, evidence of gum tape and residue of adhesive left behind indicates that there might have been a liner and backing of some kind at a certain point. The adhesive of the tape has stained the wooden frame (see figure 41). The edges of the canvas that are folding over the stretcher sides to the back show evidence of flaking of the ground - leaving visible stretched creases on the work (see figure 39). Areas of buckling, crackle, flacking and loss of materials are also evident.

The support is uneven with knots in the weave of the canvas, contributing to the rough texture (see figure 42). It also appears to be disintegrating on certain areas which make the canvas material unstable. Because of the unstable canvas areas, a denser application[4] of surface layers or ground is visible (see figure 43, 44 & 45). The canvas is deformed and distorted, bulging in and out at various areas. This can be due to uneven tension of the stretcher or the material of the canvas's inherent vice. The canvas has become brittle due to oxidization and ageing making the support failure prominent.

*Figure 42: Verso view of Alexis Preller, Man in the Sun, 1936. Close-up photo of textured canvas.*
*Pretoria Art Museum, Pretoria.*
*Photographed by the author.*

[4] Grace Welsh (a practicing painting conservator and restorer in Cape Town) advised me that this area (figure 43) might be due to a dense application of paint that results in the ground being visible on the verso.

*Figure 43: Verso view of Alexis Preller, Man in the Sun, 1936. Close-up photo of damaged area. Pretoria Art Museum, Pretoria. Photographed by the author.*

*Figure 44: Verso view of Alexis Preller, Man in the Sun, 1936. Microscopic photo of canvas weave. Pretoria Art Museum, Pretoria. Photographed by the author.*

*Figure 45: Verso view of Alexis Preller, Man in the Sun, 1936. Microscopic photo of ground layer protruding. Pretoria Art Museum, Pretoria. Photographed by the author.*

The frame provides protection and stability for the canvas painting; the support would have undoubtedly been in a worse state if the painting had not been framed. Because of the composite nature of frames, like the canvas, they are susceptible to damage (Van Horn, Culligan & Midgett 2015:75). This frame has some damaged areas due to direct physical force on the surface of the fabric and the metal sides, both on the front and the back of the frame. Indents and abrasions are evident; this could be due to improper handling (see figure 46&47).

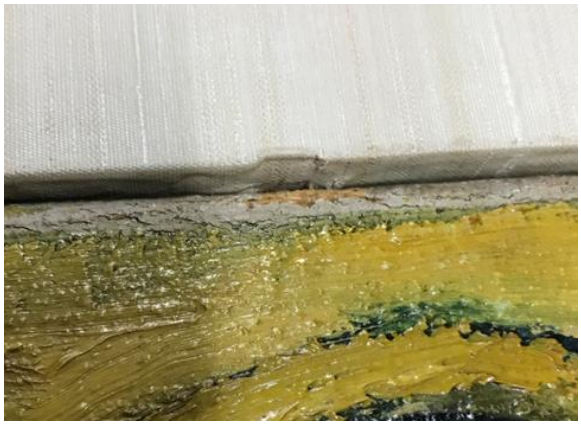
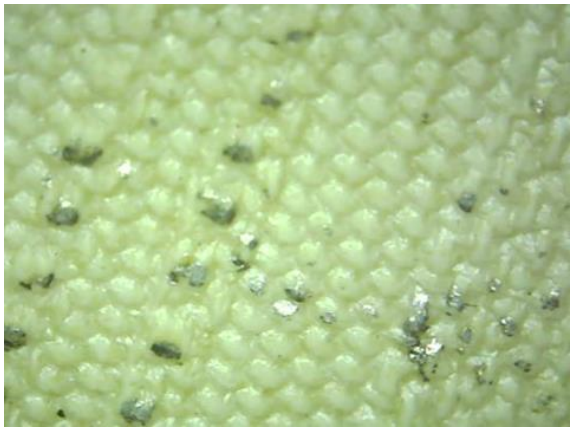



*Figure 46 & 47: Alexis Preller, Man in the Sun, 1936. Damaged areas on frame.*
*Pretoria Art Museum, Pretoria. Photographed by the author.*

### 3.5.1.2 Ground and Paint Layers/Surface Coating

The oil paint appears to be in stable condition. However, under the microscope the aging and drying cracks become visible (see figure 41, 42 & 43). The white speckles evident on the back of the canvas are most likely the ground protruding through the back of the canvas[5]. Studies have shown that the woven structure of the canvas has a role in the delamination of the ground (Hackney 2020:171). Therefore, the separation of the paint layers that is identified (which makes the flaking of the ground visible) can also be accelerated by the structure of the canvas material (see figure 48 & 49).

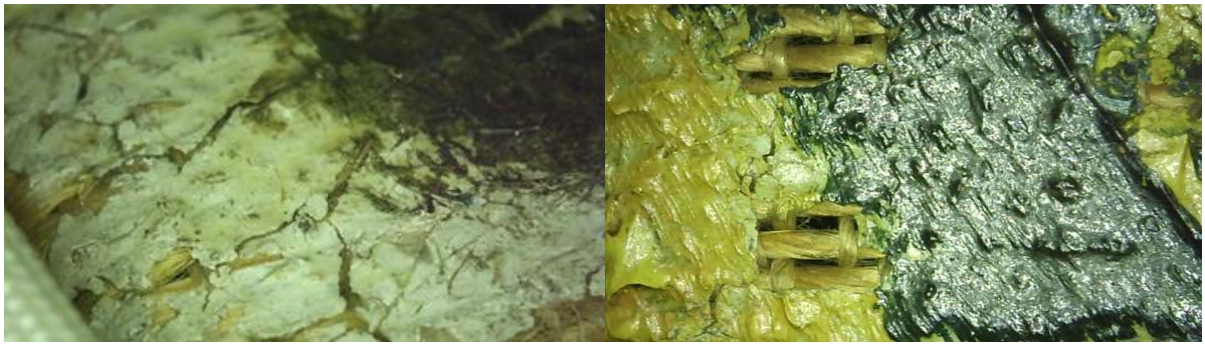
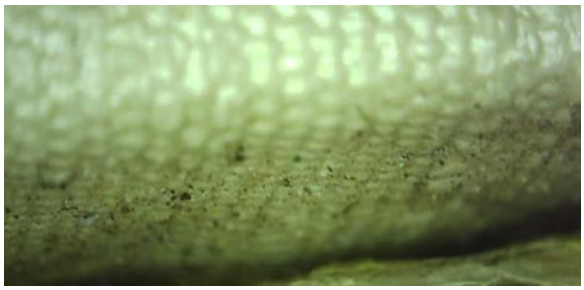


*Figure 48 & 49: Alexis Preller, Man in the Sun, 1936. Microscopic photo of damaged areas on canvas.*
*Pretoria Art Museum, Pretoria.*
*Photographed by the author.*

[5] Sandra Markgraaf (a practicing painting conservator and restorer at the University of Pretoria) advised me that the white speckles on the back of the canvas (figure 50) might be the evidence of the unstable ground layer.

*Figure 50: Alexis Preller, Man in the Sun, 1936. Close-up photo of surface dust and dirt and ground protruding to the back. Pretoria Art Museum, Pretoria. Photographed by the author.*



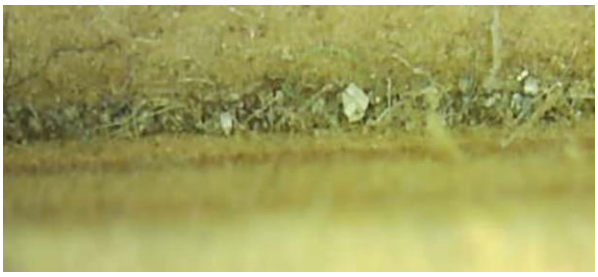


*Figure 51 & 52: Alexis Preller, Man in the Sun, 1936. Microscopic view of dirt pockets. Pretoria Art Museum, Pretoria. Photographed by the author.*

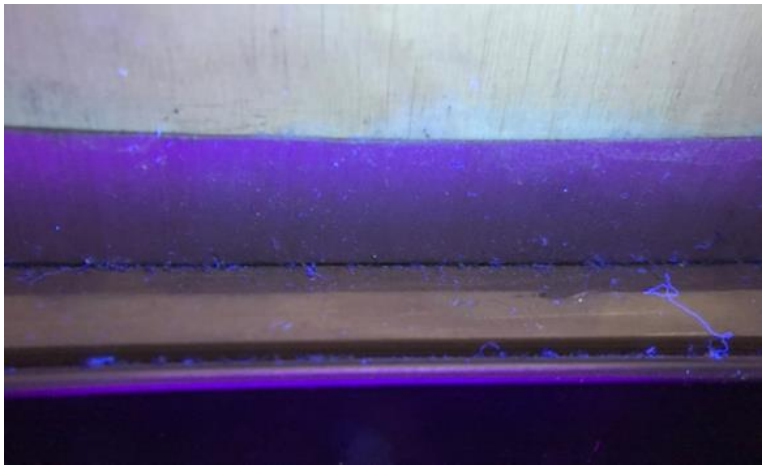


*Figure 53: Alexis Preller, Man in the Sun, 1936. Close-up photo of surface dust and dirt with UV light. Pretoria Art Museum, Pretoria. Photographed by the author.*

Dust and dirt accumulation are mostly evident in areas that are susceptible to unwanted material. These foreign matters are particularly visible in the corners and the spaces between the stretcher and the frame (see figure 51, 52 & 53). These areas are known as dirt pockets (*Glossary for paintings*… 2020). When one takes a closer look, some surface dust is also evident on the back exterior and front areas of the painting. In the back of the wooden frame stains and hair line splits that run with the grain of the wood are evident (see figure 39& 57). Wood is subject to environmental changes such as humidity and temperature, which causes

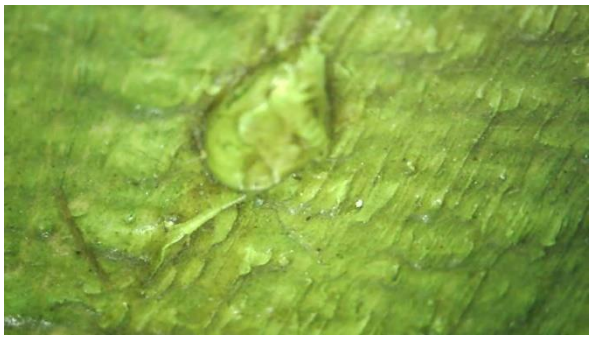
swelling and shrinking and results in structural deterioration (splitting or cracking) (Kirsh & Levenson 2000:9). Graphite and black Koki marks are also visible along with residue of tape, an indent left from a round label and discolouring from adhesives on the wooden frame. The purpose of these markings is unknown (see figure 54, 55, 56 & 57).


*Figure 54-57: Alexis Preller, Man in the Sun, 1936. Damaged areas, indents, tape residue and inscriptions on the back of the painting. Pretoria Art Museum, Pretoria. Photographed by the author.*

The ground is a light off-white colour, which can be seen in numerous areas where the paint does not cover the whole canvas. Preller painted with an impasto (heavily textured brushstrokes) technique. The application of Alla Prima technique is also visible, applied by both thick and thin brush strokes that stand out separately instead of blending into each other. Rich, thickly applied paint that has not been thoroughly dried between layers often leads to

drying contraction cracks. This happened because the artist, as Impressionists, frequently worked spontaneously and fast. In this process, the lowers layers of paint are starved of oxygen, and this can lead to localised cracks and even structural loss (Hackney 2020:174).

The heavily textured paint protruding to the surface gives dust and dirt a place to settle (see figure 58&59). The artist used a glossy varnish to seal the painted surface (see figure 60). The varnish has been applied evenly, with no evidence of dripping. Evidence of the varnish aging is visible when the artwork is examined closely: its transparent character is yellowing with age. Other aspects, such as pollutants and incorrect lighting, might also have accelerated the discolouring of the varnish (Pedersoli, Antomarchi & Michalski 2016:40). This discolouring of varnish is not unusual; even modern synthetic varnishes tend to change colour with age (Kirsh & Levenson 2000:218).



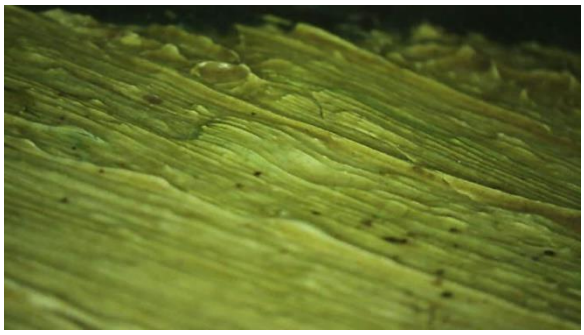


*Figure 58 & 59: Alexis Preller, Man in the Sun, 1936. Microscopic view of textured surface and surface dirt. Pretoria Art Museum, Pretoria. Photographed by the author.*

*Figure 60: Alexis Preller, Man in the Sun, 1936. Microscopic view of textured surface. Pretoria Art Museum, Pretoria. Photographed by the author.*

Although the cracks seen under investigation might be visually intrusive, this does not suggest that the painting is unstable (Hackney 2020:170). However, the back of the artwork reveals that the ground is not fixed to the canvas, creating detachment of the layers. The artist's technique (applying repeated forceful brushstrokes) also leads to localised pressure on the canvas. These cracks are drying cracks, which differ to the aging cracks that usually affect the canvas and ground layers (see figure

61&62). Therefore, the artist is the first culprit responsible for the formation cracks (Hackney 2020:171). It is also worth noting that the same crack marks are running through the signature, which can help establish authenticity (see figure 63).

*Figure 61: Alexis Preller, Man in the Sun, 1936. Microscopic view of cracks. Pretoria Art Museum, Pretoria. Photographed by the author.*

*Figure 62: Alexis Preller, Man in the Sun, 1936. Microscopic view of cracks in the paint layer. Pretoria Art Museum, Pretoria. Photographed by the author*

*Figure 63: Microscopic view of a crack through the signature. Pretoria Art Museum, Pretoria. Photographed by the author.*

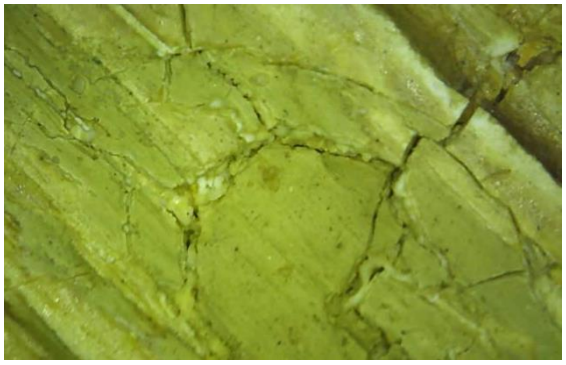


*Figure 64: Alexis Preller, Man in the Sun, 1936. Microscopic view of physical damaged caused by force. Pretoria Art Museum, Pretoria. Photographed by the author.*

### *3.5.2 Special characteristics*

3.5.2.1 Frame

The frame consists of off-white, raw silk inner liner with a golden aluminium metal border. Scratch marks on the metal frame and abrasions on the inner liner are clearly visible. Surface dust and dirt is also evident. The painting does not have glass on the front which would protect it against dust collecting on the surface. Preller placed a lot of thought into framing the artwork. He designed the frame himself and had it made in a specific manner which compliments the work (Deichmann 1986:41). As his style changed, Preller reframed numerous of his works throughout his career, in order to keep up with the technological advancements of materials. As with *Man in the Sun* 1936, Preller used to frame many of his works in this specific style. The white and aluminium frame gives the painting a sophisticated look. In a letter to Christi Truter in 1937, Preller wrote:

"Judith and her brother John called me to find a frame for "the Studio"- I had in mind a whitish thing, fairly heavy. Although "The Studio" looked fine in several whitish frames, a huge, very dark reddish frame lifted the picture out and at once became significant, really grand." (Deichmann 1986:41).

*Figure 65 & 66: Alexis Preller. You will never know, 1971. Oil on canvas. 137.5 x 137.5 cm. Private Collection. Photographed by Karel Nel.*

### 3.5.2.2 Signature

Like Van Gogh's work, the signature is painted in the top right corner of the painting (see figure 68). The signature also gives the viewer information regarding the timeline of Preller's work. He changed his signature from capital letters (*Man in the Sun* 1936) to a more fluid writing style in some of his later works. It is also worth noting that Preller did not put a date on this particular painting (see figure 67).


*Figure 67: Alexis Preller, Man in the Sun, 1936. Close-up photo of signature. Pretoria Art Museum, Pretoria. Photographed by the author.*

*Figure 68: Vincent van Gogh, Patience Escalier, 1888. Cropped photo of signature. Pasadena, California: The Norton Simon Museum of Art.*

### 3.5.2.3 Painting Edges

By not painting to the edges of the canvas, Preller chose to give this painting an unfinished look (see figure 69). This again makes it evident how he replicated Van Gogh's technique and style in this specific work.

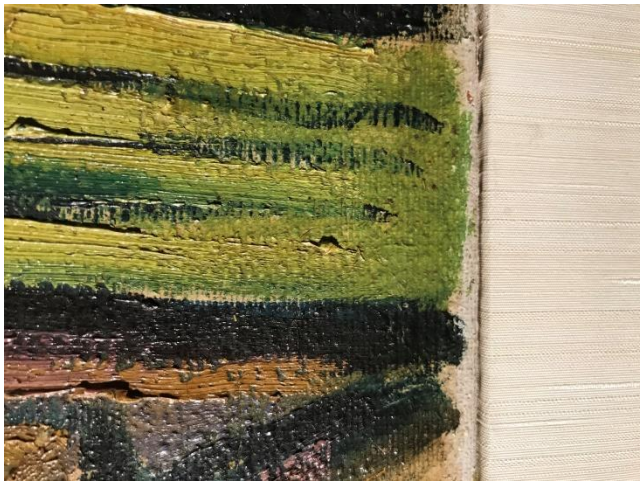


*Figure 69: Alexis Preller, Man in the Sun, 1936. Close-up of unpainted edges of canvas. Pretoria Art Museum, Pretoria. Photographed by the author.*

### 3.5.2.4 Collectors mark & labels

In the top centre of the back of the frame three labels run horizontally (see figure 70, 71 & 72). These labels contribute to the provenance of the painting (Kirsh & Levenson 2000:242).

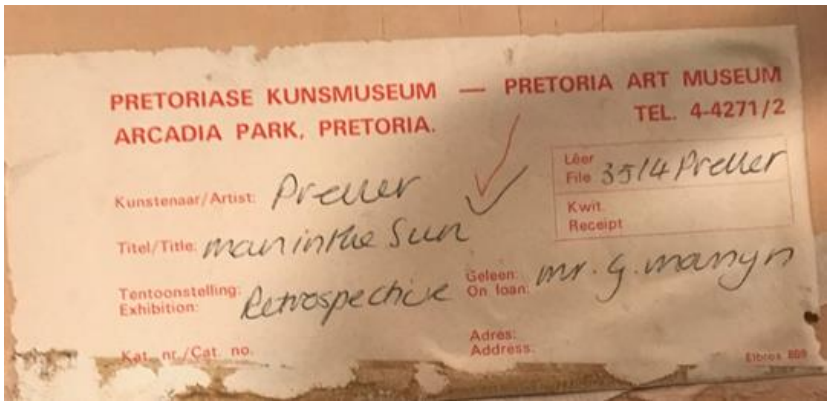



*Figure 70: Alexis Preller, Man in the Sun, 1936. Label on the back of the frame. Pretoria Art Museum, Pretoria.*

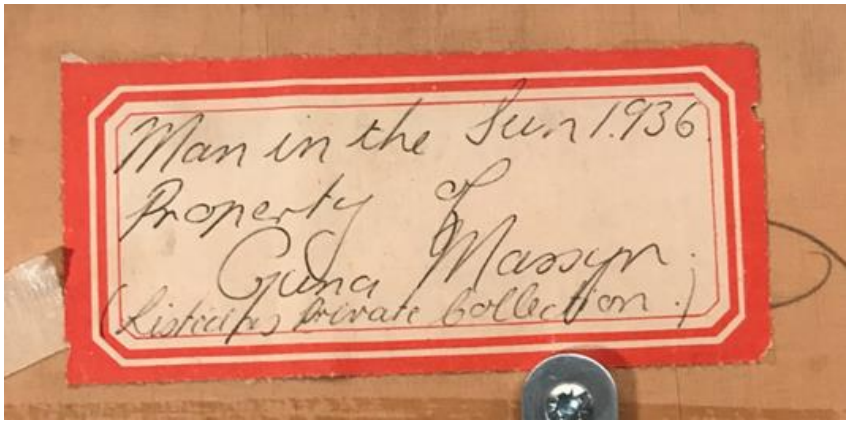



*Figure 71: Alexis Preller, Man in the Sun, 1936. Label on the back of the frame. Pretoria Art Museum, Pretoria. Photographed by the author.*

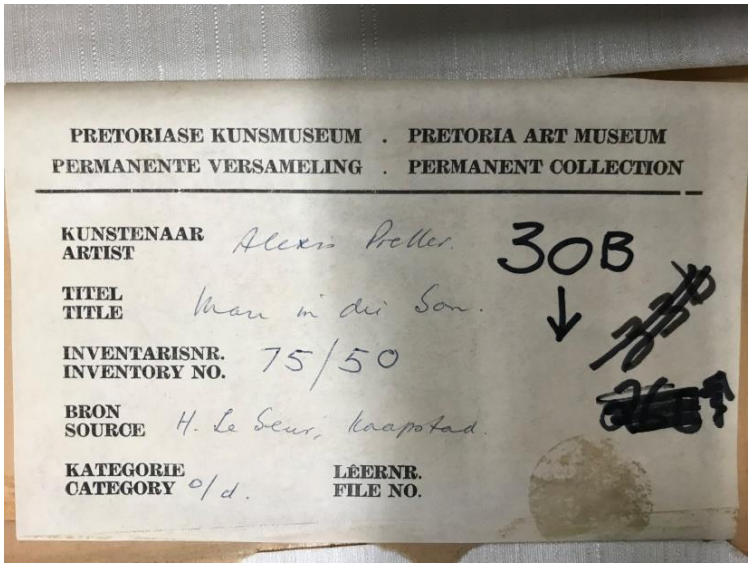



*Figure 72: Alexis Preller, Man in the Sun, 1936. Label on the back of the frame. Pretoria Art Museum, Pretoria. Photographed by the author.*

### 3.6 Munsell Colour System


Background and Hat: 2.5Y 6/10
Light area on headband: 5Y 8.5/6
Light green scarf: 2.5 GY 7/6
Darker green scarf: 2.5G 2/4
Orange Coat and face: 5YR 6/12
Purple coat and face: 2.5R 5/2
Black outlines: N 1.75
Blue face: 7.5B ¾
Red face: 10R 4/8

*Figure 73: Munsell colour pallet of Alexis Preller, Man in the Sun, 1936. Pretoria Art Museum, Pretoria. Photographed by the author.*

Preller used yellows, greens, reds, blues as well as green-yellow, yellow-red, and black outlines. Preller applied the same colour he used on the coat in the strokes seen on the face of the figure. The background and the hat are also the same colour, broken by the black outline. This is done in order to separate the background from the figure and in this case specifically the hat.

### 3.7 Provenance

Provenance research is not necessarily crucial to a visual analysis, but it could reveal important information about the artwork. Often stamps, labels, numbers, writing and archival information can provide us with a more holistic understanding of the history of a painting.

As determined by the acquisition information and the labels on the back of the frame, *Man in the Sun* 1936 was bought from Le Seuer[6] in 1975 by the Pretoria Art Museum. It was previously part of Guna Massyn's private collection (see figure 74).

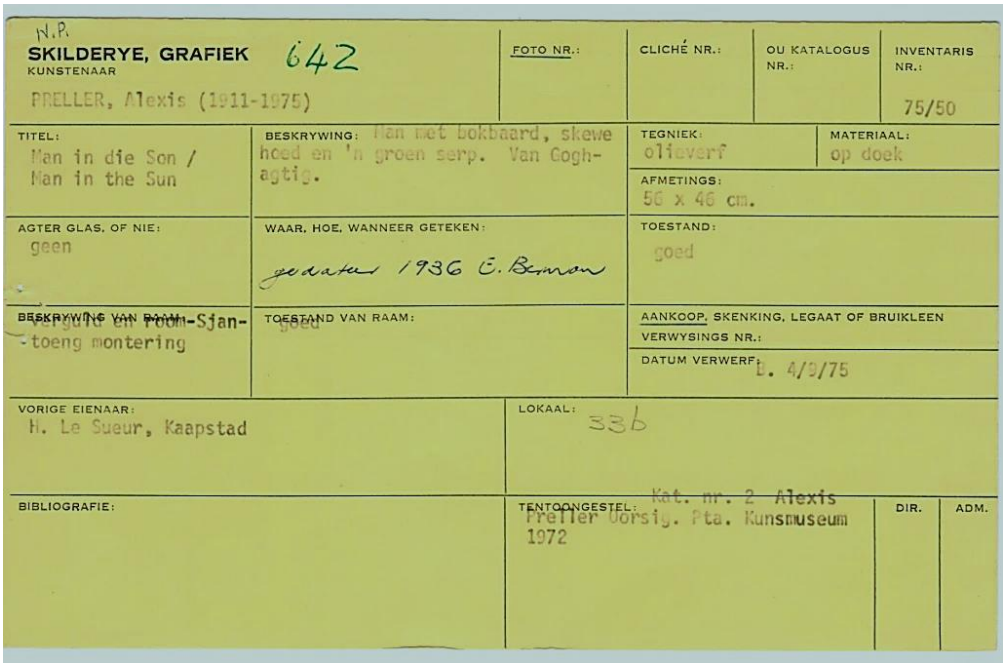

N.P.
SKILDERYE, GRAFIEK 642
KUNSTENAAR
PRELLER, Alexis (1911-1975)
FOTO NR.:
CLICHÉ NR.:
OU KATALOGUS NR.:
INVENTARIS NR.:
75/50
TITEL:
Man in die Son / Man in the Sun
BESKRYWING: Man met bokbaard, skewe hoed en 'n groen serp. Van Gogh-agtig.
TEGNIEK: olieverf
MATERIAAL: op doek
AFMETINGS: 56 x 46 cm.
AGTER GLAS, OF NIE: geen
WAAR, HOE, WANNEER GETEKEN: gedateer 1936 E. Berman
TOESTAND: goed
BESKRYWING VAN RAAM: vergulde en room-sjan-toeng montering
TOESTAND VAN RAAM: goed
AANKOOP, SKENKING, LEGAAT OF BRUIKLEEN
VERWYSINGS NR.:
DATUM VERWERF: D. 4/9/75
VORIGE EIENAAR: H. Le Sueur, Kaapstad
LOKAAL: 33b
BIBLIOGRAFIE:
TENTOONGESTEL: Kat. nr. 2 Alexis Preller Oorsig. Pta. Kunsmuseum 1972
DIR.
ADM.

*Figure 74: Acquisition information on Alexis Preller, Man in the Sun, 1936. Pretoria Art Museum, Pretoria. Photographed by the author.*

### 3.8 Chapter Conclusion

In conclusion, Alexis Preller's Man in the Sun, 1936 is a canvas painting, appears to be done in oil paint. Most of Preller's paintings were done in oil paint and the documentation supports this even though no scientific evidence is done in the study, regarding the binder used. Even though this is a lesser-known work of Preller, the provenance of the painting was supported through archival material and traced back to the artist. The thickly applied of paint used by the

[6] Dirk Oegeman, head of museum services, advised me that this might have been a typo. It should be J le Sueur instead of H. Le Sueur.

artist and the inherent vice of the support contributes to the deterioration of the surface of the paint layers. Through doing a thorough condition report the painting appears to be fair. However, intervention must be taken sooner rather than later in order to stop deterioration and salvage the original material.

# CHAPTER FOUR:

# WHAT LURKS BENEATH THE SURFACE?

## 4.1 Introduction

This chapter goes beyond what can be seen on the surface and focuses on the structural layers of the artworks (the materiality of the work). The selected artwork will be examined and analysed through employing Technical Photography and X-ray Fluorescence Spectroscopy (XRF). The chapter will discuss each technique in the order it was done throughout my research. The process and outcome of each technique will be discussed with the aid of illustrations and photos taken during the research.

## 4.2 Technical Photography

Technical Photography (TP) refers to the collection of images that were acquired using a digital camera with different light sources and filters. This enables me to incorporate ultraviolet and infrared images, which will reveal even more information, such as under drawings, previous restoration attempts and any information that is not visible to the naked eye. This is an ideal first step in understanding Preller's technique and style (Cosentino 2015). Once these images were collected, they were used as a reference to construct a multispectral model of the artwork.

*Figure 75: The set-up of a save and workable space to start with collection of data. Pretoria Art Museum, Pretoria. Photographed by the author.*

### *4.2.1 The Set-Up*

The first step was to create an appropriate space to work in (see figure 75). This was discussed in detail in Chapter 3.

### *4.2.2 Equipment used to collect data*

A Canon EOS 6D Mark II and a Canon EF 24-70mm f/2.8L II USM lens were used in order to capture reflected and raking light.

For the Ultraviolet-radiation (non-standard illumination), a Canon 6D 20.2 Megapixel Camera with UV-VIS-IR Functionality was used along with the Canon EF 24-70mm f/2.8L II USM lens. The necessary filters were also applied. In order to capture these images, the camera had a UV pass filter with IR blocking capability (the X-Nite 330nm Coated Filter).

The visible light filter is an X-Nite Band Pass Series 1 (BP1) 320 – 670nm and the infrared filters are X-Nite 715nm, X-Nite 850nm and X-Nite 1000nm. These were used to photograph the infra-red radiation through a visible-light blocking filter and an infra-red passing filter.

- UV lamp

The artwork was exposed to ultraviolet (UV) radiation from a Q-22 Ultraviolet light with 2 UV Bulbs (110 Volst) which has a peak intensity of 650 microW/cm$^2$ at 6 inches. BLE-220B and UVA bulbs were used. This enabled ultraviolet-induced visible fluorescence.

- USB Microscope

A Wi-Fi Digital Microscope with a 1000X magnification ratio was used

- Colour chart

X-Rite ColorChecker Passport 24-Patch Target.

- Software

Canon remote shooting software and Rawtherapee was used.

## 4.3 Technical Photography: Taking a closer look

### *4.3.1 Normal illumination*

Paintings are always examined first with the naked eye and under normal light. This forms the basis for the entire investigation and enables me to make the appropriate choices regarding how to proceed with further analytical study. I approached this by implementing a standard viewing

of the appearance of the painting. This is done using normal or reflected illumination. I made sure to use relatively flat, uniform illumination with minimal surface glare, see figure 76 (Frey et al., 2008:113). Figure 77 is the result of the painting under normal illumination.

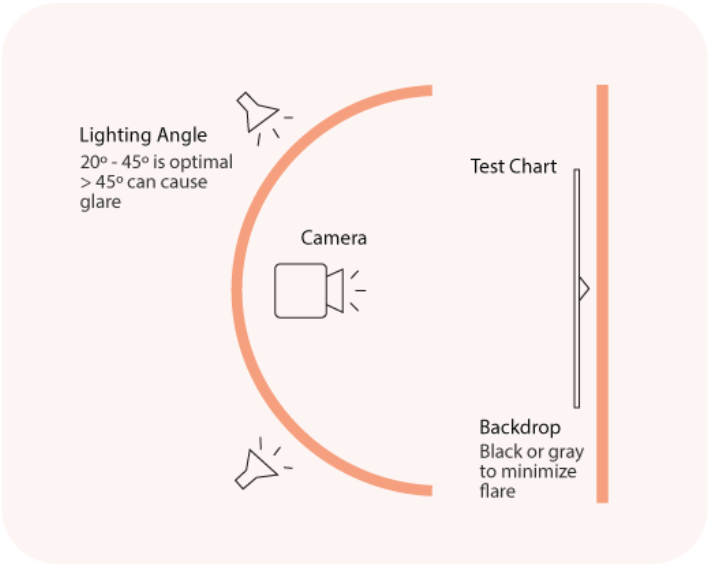



*Figure 76: Illustration of camera and light positioning. Designed by author.*

*Figure 77: Normal Illumination of Alexis Preller, Man in the Sun, 1936.*
*Oil on Canvas, 560mm x 467mm*
*Pretoria Art Museum, Pretoria.*
*Photographed by the author.*

### *4.3.2 Raking light*

Raking light is a technique in which the painting is illuminated from one side only, at a slanting angle relative to its surface (see figure 80). Raking light is used to reveal a painting's surface texture (see figure 78). Raised paint surfaces facing the light are illuminated, while those facing away create shadows. This technique, positioning a single light at a low angle, helps in the documenting of the surface topography and texture (Frey et al., 2008:116). This technique reveals areas of indentations, bulges, folds, lifting paint or inlay, textile weaves, abrasions etc.

*Figure 78: Raking light image of Alexis Preller, Man in the Sun, 1936.*
*Oil on Canvas, 560mmx467mm.Pretoria Art Museum, Pretoria. Photographed by the author.*

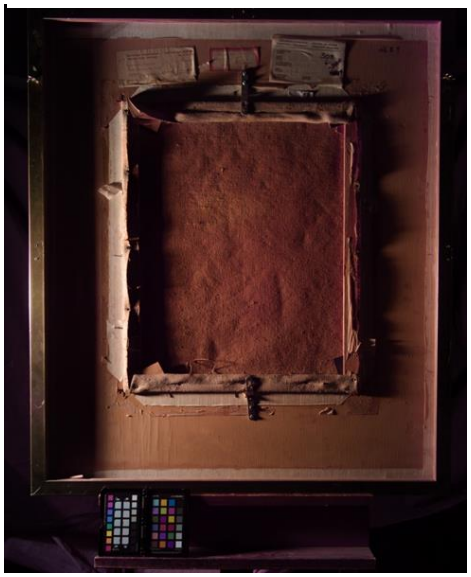


*Figure 79: Raking light image of verso of Alexis Preller, Man in the Sun, 1936.Oil on Canvas, 560mm x467mm. Pretoria Art Museum, Pretoria. Photographed by the author.*

Preller's impasto technique was clearly made visible through the use of raking light illumination. It further revealed surface defects and structural issues with the support (see figure 59). It also enabled me to better study stroke patterns, which helped me identify the manner and direction of the stroke as well as the viscosity of the paint (*Pigments Through the Ages* [sa]).

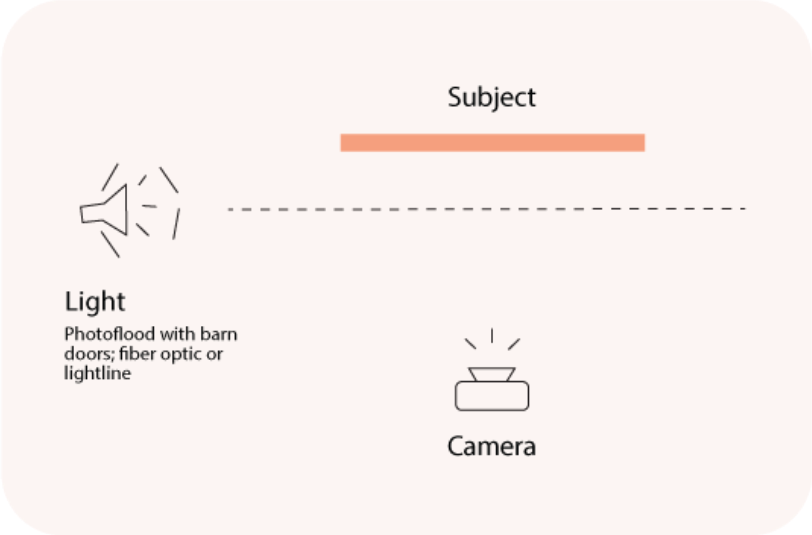



*Figure 80: Illustration of camera and light positioning of Raking light. Designed by Author.*

### *4.3.3 Specular illumination*

This technique is done through positioning both the light source and the camera in such a manner that they capture the reflection of the surface of the painting. The idea is to capture and document information regarding the topography of the painting. This technique can highlight planarity, disparities in surface sheen and the evidence of coatings on the painting (Frey et al., 2008:118). The two ways to execute specular illumination is axial and oblique.

.

*Figure 81: Axial Specular image of Alexis Preller, Man in the Sun, 1936. Oil on Canvas, 560mm x 467mm Pretoria Art Museum, Pretoria. Photographed by the author*

#### 4.3.3.1 Axial Specular illumination (figure 81)

With this technique I took the photo placing the lamp at the same axis from where I am situated. The camera is positioned parallel to the painting's surface and the light source is placed adjacent to the camera (see figure 82).

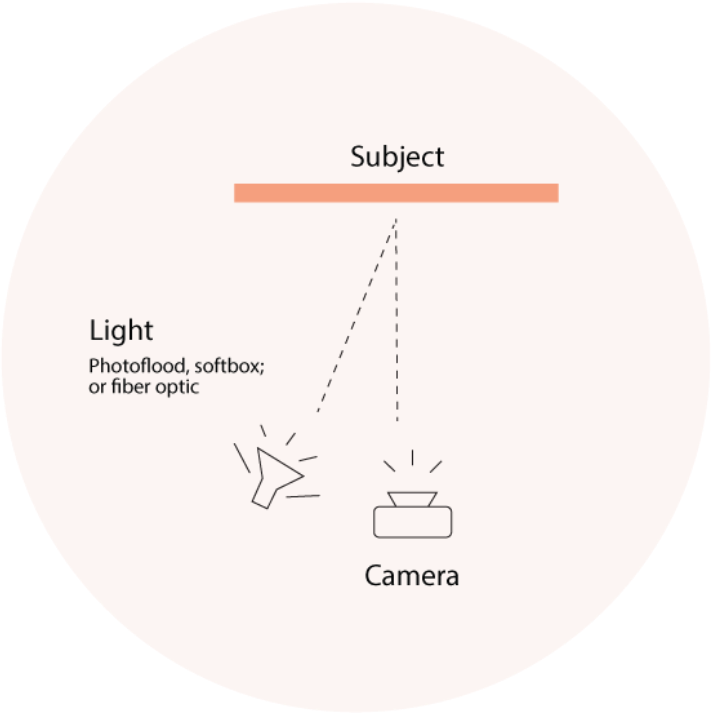



*Figure 82: Illustration of camera and light position with Axial Specular. Designed by author.*

#### 4.3.3.2 Oblique specular (figure 83)

With this technique the camera is positioned opposite the light source on both sides of the painting (see figure 84). The application of these techniques reveals even more characteristics of the work. The varnish glare and the unstable canvas support now become clearly visible. Recording light reflection from the surface of an object enabled me to better study the structure of a painting through digital imaging. It further shows subtle variations in texture on the surface of the work.

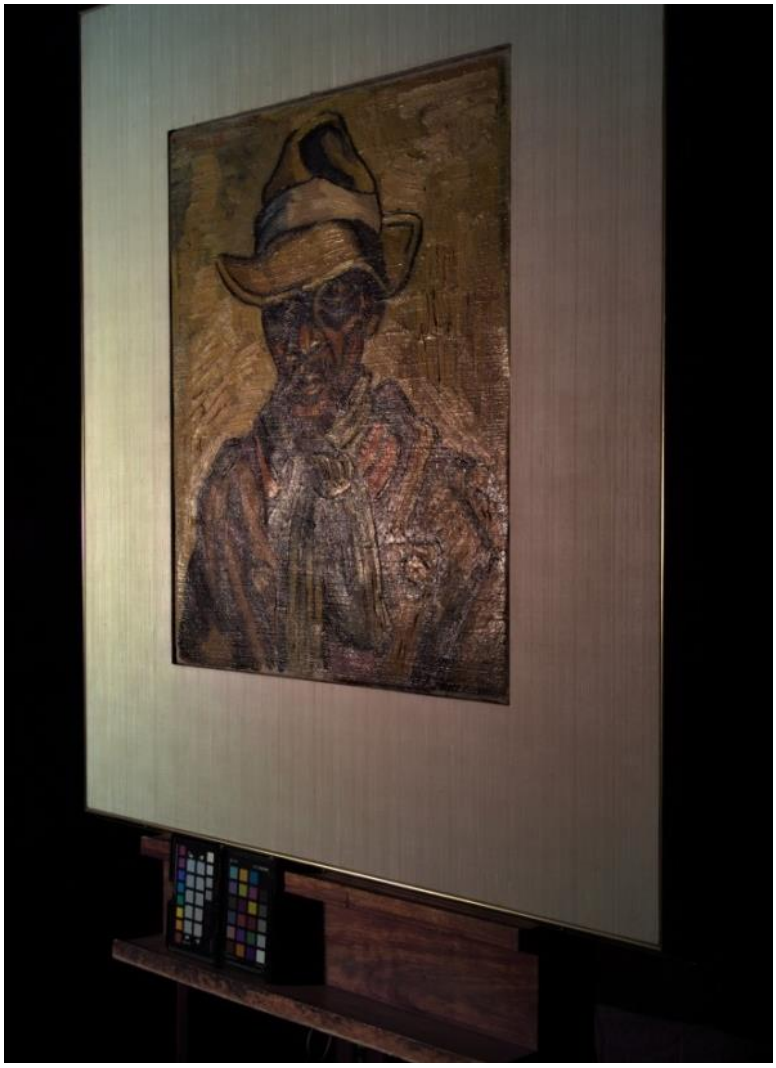


*Figure 83: Oblique Specular image of Alexis Preller, Man in the Sun, 1936. Oil on canvas, 560mm x 467mm. Pretoria Art Museum, Pretoria. Photographed by the author.*

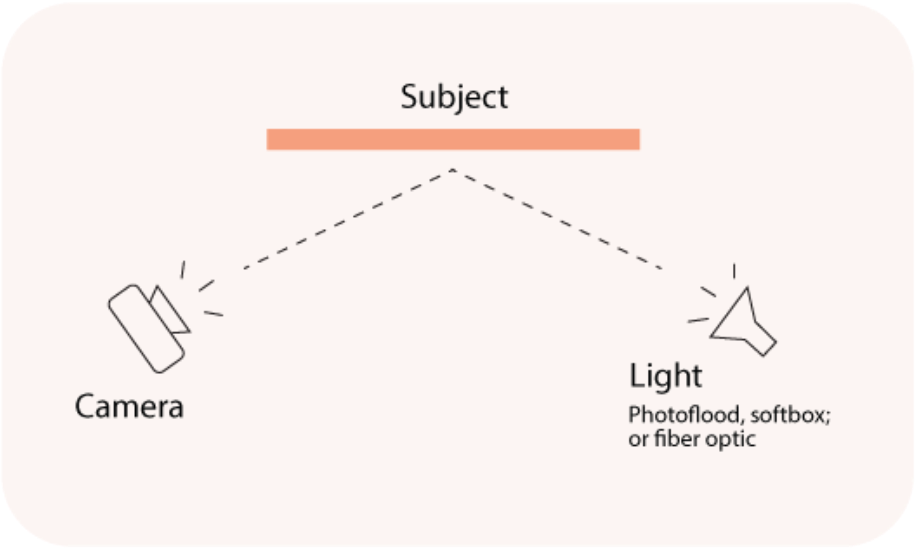
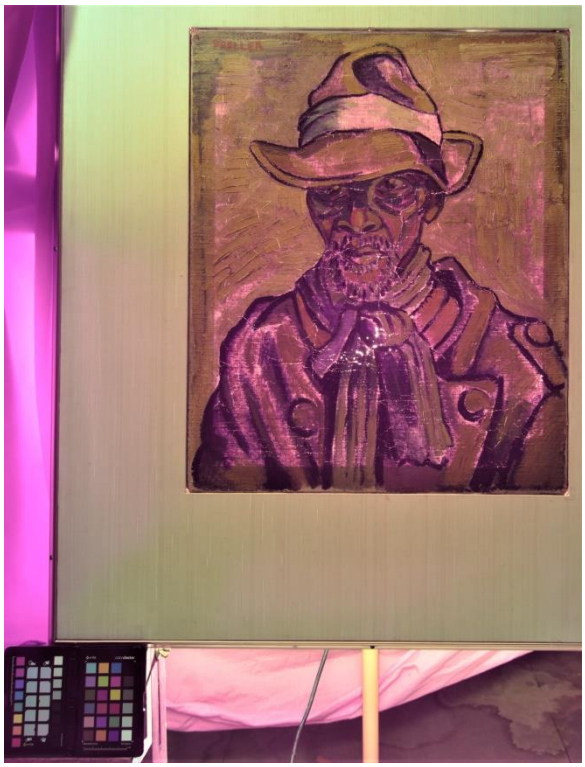



*Figure 84: Illustration of camera and light position with Oblique Specular. Designed by author.*

### *4.3.4 Transmitted illumination*

This involves the placement of a light source behind the painting in order to reveal any faults, cracks or other concerns (see figures 85). The light that penetrates through to the viewer is recorded and reveals the painting's characteristics in terms of density, opacity, thickness, and lacunae amongst other features. Damage such as abrasion, tears, cracks, losses, repairs, and water damage can be documented through using this technique (Frey et al., 2008:121). This technique helped me better study the signature as well as signs of previous restorations done on the work (*Pigments Through the Ages* [sa]).



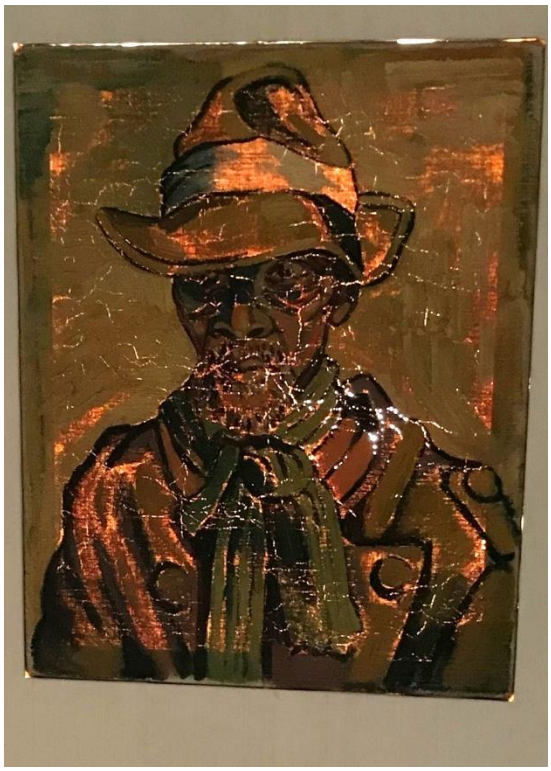


*Figure 85 & 86: Transmitted Light image of Alexis Preller, Man in the Sun, 1936. Oil on Canvas, 560mm x 467mm Pretoria Art Museum, Pretoria. Photographed by the author.*

Using transmitted light helped me study the obscured pattern that is not visible to the naked eye (see figure 85 & 86). The light passed through the artwork, revealing image layers below the surface. The outer layers of the painting mask this information, but investigating it further reveals important historical information about the artwork.

When studying a painting, the electromagnetic spectrum cannot be ignored. It provides you with crucial information about the artwork. This deals with wavelengths that are both visible and invisible to the naked eye. Our eyes are only able to see a very narrow range of light in the

visible spectrum and this technique enables us to take images of the work on a deeper level, through the use of ultraviolet and infrared wavelengths (*Pigments Through the Ages* [sa]).

- Ultraviolet-induced visible fluorescence photography
- Ultraviolet light, Ultraviolet Fluorescence (UVF) and Ultraviolet Reflectography (UVR)

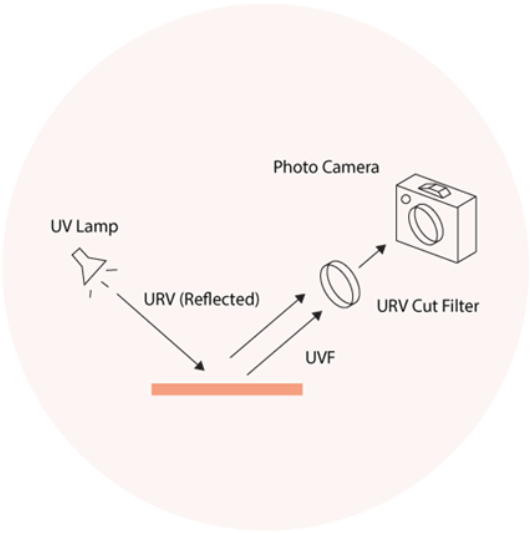
For these two non-standard illumination techniques a Canon 6D 20.2 Megapixel Camera with UV-VIS-IR Functionality, the Canon EF 24-70mm f/2.8L II USM lens was used. The images were captured with a digitise camera while they were illuminated with UV lamps (Frey et al., 2008:154-157).

UV fluorescence refers to the process with occurs when an electron of an atom or molecule is excited and then relaxed to its ground state. This emits a photon with energy which enables us to observe the differences between the two states. Successful observation of the light emission on polychrome paintings is dependent on many factors. These include materials used, the wavelength and bandwidth of the UV light source and how these different elements react to each other. This technique can be used to identify the pigments and better study the varnish. It is important to remember that the varnish might influence the findings, as it usually has a strong fluorescence which can obscure the pigments (Cosentino 2015:58).

This technique is to more thoroughly investigate the materials used in Preller's painting, but cannot be employed by itself alone, as it forms part of a larger investigation of the artwork. The UV fluorescence ascends from the subsurface layer of the painting and is hardly ever influenced by underlying layers. Therefore, the use of this technique is only recommended if the varnish has been removed from the painting. This technique is also used as a complimentary or supplementary technique when it comes to documenting pigments. However, UVF photography is ideal for some identifications of the characterisation of a painting.

This technique was done by setting up the camera with a UV pass filter with IR blocking capabilities (the X-Nite 330nm Coated Filter) (see figure 87).

UV light makes it easy to detect organic compounds. It further reveals previous restoration attempts that are visibly darker than the original varnish that was applied to the artwork. Natural resin varnishes are illuminated under UV light which means that UVF is beneficial in the characterisation of a painting. Oil paint and newer varnishes are not revealed under UV, which makes it easy to distinguish between older and newer work done. Retouches appear as dark spots on the surface.




With this work, no evidence of retouching (see figure 88) was evident, and the painting has been varnished so the identification of pigments was not possible. Because this is a non-destructive study, I have decided to not remove a section of varnish to study the pigments, but rather investigate this through the use of XRF (which will be discussed later).

*Figure 87: Illustration of UV light partly absorbed and partly reflected and then re-emitted in a range that is visible to the human eye. Designed by author.*

*Figure 88: Close-up of UV light of Alexis Preller, Man in the Sun, 1936. Oil on Canvas, 560mm x 467mm. Pretoria Art Museum, Pretoria. Photographed by the author.*

### *4.3.5 Reflected infrared photography*

Reflected infra-red photography often reveals hidden features of the artwork that cannot be seen under normal illumination (see figure 69). This grants insight into the technique; previous restoration attempts and ultimately authorship of the painting. Subsurface layers of the painting are made visible when different wavelengths of infrared light pass through the camera lens. This grants me significant insight into Preller's process – whether he made under drawings and if he later changed his mind and painted over these. Two visible-light sources which contain the infra-red-light spectrum were placed on either side of the artwork. Infra-red radiation can be photographed through a visible-light blocking filter and an infra-red passing filter. The visible light filter is an X-Nite Band Pass Series 1 (BP1) 320 – 670nm and the infrared filters are X-Nite 715nm, X-Nite 850nm and X-Nite 1000nm.

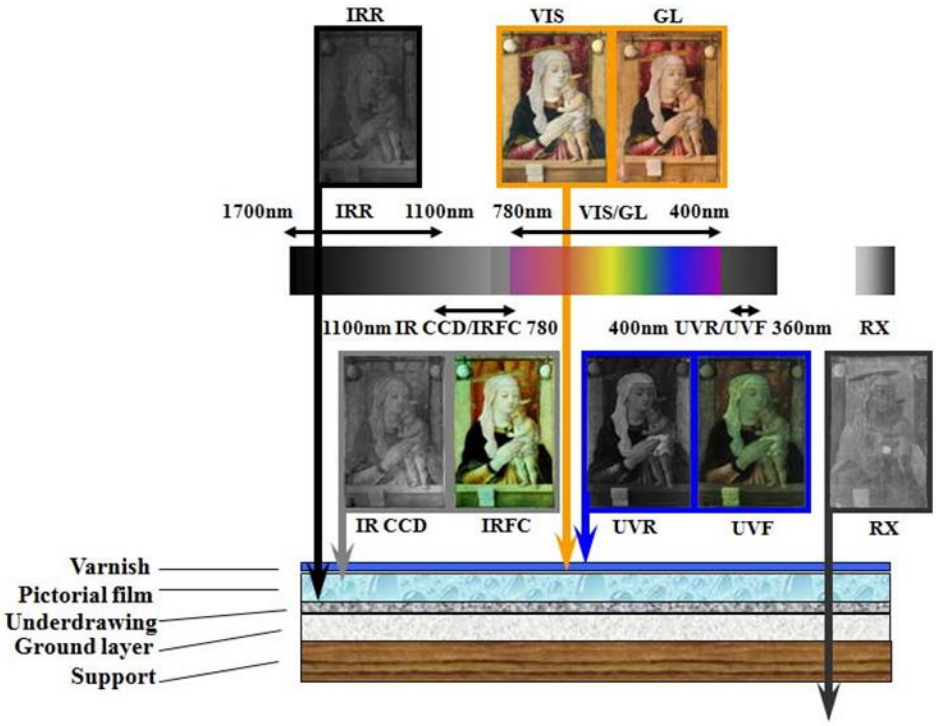



*Figure 89: Illustration of the different capabilities of multispectral imaging techniques*. (*Pigments Through the Ages* [sa]).

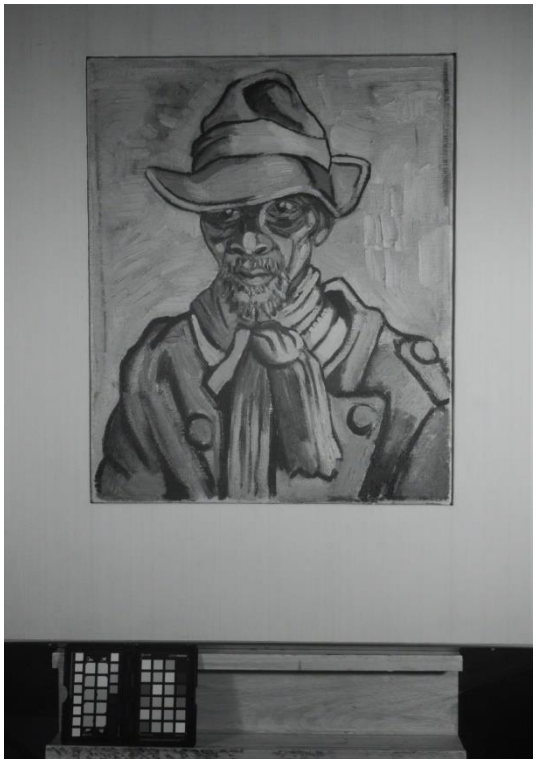


*Figure 90: Reflected infra-red photography of Alexis Preller, Man in the Sun, 1936.*
*Oil on Canvas, 560mm x 467mm.Pretoria Art Museum, Pretoria. Photographed by the author.*

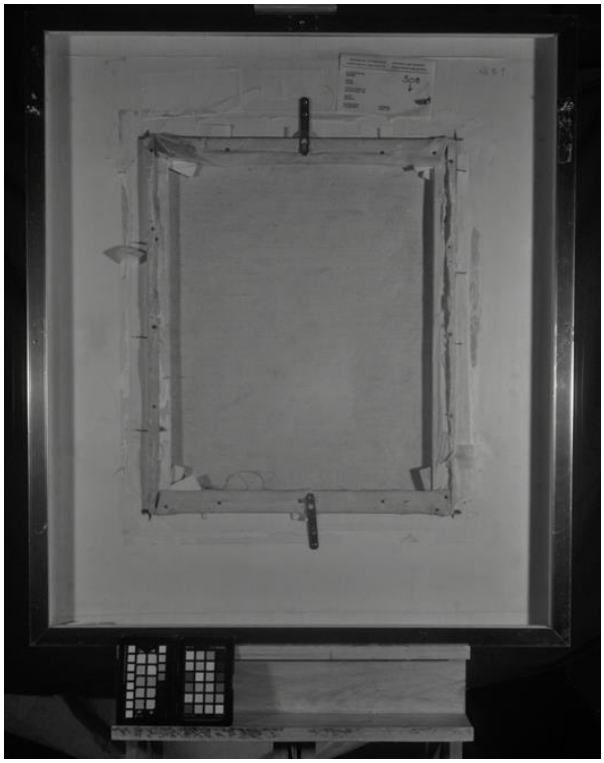


*Figure 91: Reflected infra-red photography of verso Alexis Preller, Man in the Sun, 1936. Oil on Canvas, 560mm x 467mm. Pretoria Art Museum, Pretoria. Photographed by the author.*


*Figure 92: Reflected infra-red photography of hidden inscriptions under labels, verso. Pretoria Art Museum, Pretoria. Photographed by the author.*

Reflected infrared photography reveals the different types of materials used in the artwork. This includes previous restoration attempts, inks, dyes under drawings and signatures. In this artwork it was revealed that there is no under drawings, however, the inscriptions on the back of the frame under the labels became more evident (see figures 90,91 &92). Galleries often use

labels at the back of a painting to indicate the artist's name, the date of the painting, the name of the painting, its inventory number, and any exhibitions that the work was used in.

### *4.3.6 Post-processing*

The camera is calibrated with the X-rite Color Checker Passport when employing visible and UV fluorescence photography. Applying this helps me manage my colour so that it can be investigated in the correct manner. Cameras often differ, so it is important to calibrate them before they are used. The images are shot in RAW format before they are colour corrected using the DNG camera profile. Adobe Camera RAW software is used for this before the appropriate temperature and tint are assigned (Cosentino [Sa]).

The white balance was corrected. The original RAW file was kept with the edited file to distinguish the difference. The image was also cropped and straightened, and minimal editing was applied in order to present the picture as true as possible to its original state.

*Figure 93: XRF done on Man in the Sun, 1936. Oil on Canvas, 560mm x 467mm*
*Pretoria Art Museum, Pretoria. Photographed by the author.*

I used a Bruker Traced 5i handheld X-ray fluorescence spectrometer equipped with a rhodium (Rh) X-ray tube to perform non-destructive elemental analysis on the painting. This was done for 30 seconds using 30 kV accelerating potential, 5 μA current, without any beam filters.

## 4.4 XRF Spectroscopy

I used X-ray fluorescence spectroscopy (XRF) to identify the pigments that were used in the painting. XRF is non-invasive and non-destructive and helped me gather information about the elemental composition of the artwork. XRF spectroscopy enabled me to detect the attributes of not only the top layer of pigments, but also of those present underneath. Specific pigments can be identified through the combination of elements present in the painting. These elements can either occur alone, or in combination with others (Bezur & Sperber, 2016:5).

In order to identify the pigments conclusively, X-ray diffraction (XRD) or Raman spectroscopy is required. Our department, unfortunately, does not have access to these techniques so they were not employed.

### *4.4.1 How it works*

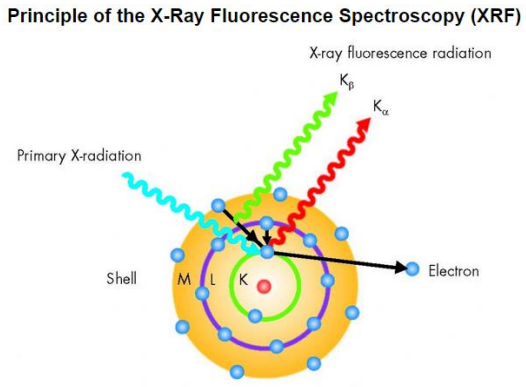



*Figure 94: Illustration of XRF spectroscopy basic principle.*

X-rays have energies between ultraviolet and gamma radiation. They are part of the electromagnetic spectrum, and they are absorbed and cause fluorescence when they interact with material on an atomic level. This is the basis of XRF spectroscopy.

The electron from one of the orbitals that surround the nucleus is knocked out by x-rays. This produces a vacancy in the orbital, which in turn renders the atom unstable. An electron from a higher energy then falls into the vacancy in order to restore the atom to a stable state. The energy difference between the higher energy electron and the vacancy is then emitted as fluorescent x-ray with an energy characteristic to a specific line of a specific atom.

The energy that is emitted from the x-ray is usually independent of the chemistry of the material. Different instrument configurations enable us to see different elements, but XRF generally detects elements from sodium (Na) to uranium (U) and can even detect sub-ppm levels, in some cases. Heavier elements tend to be detected more easily. XRF is commonly used as a fast method to identify elements in many matrices.

The XRF provided me with spectra of peaks that reveal the composition of the material when investigated. The horizontal axis reveals the energy of the elements, while the heights of the peaks grant insight into the concentration of the element present.

Non-destructive XRF analysis was performed on seventeen target areas in an attempt to determine the pigments used by Preller in this specific work. In the table below the sections are divided into colours as well as identifying features like the signature. The elements indicated in bold have a major response signal, normal text indicates a minor response signal and italics indicates a weak response signal. The data collected is only a guideline that is based on the peak intensities evident and is in no way a quantitative study.

Table 1: XRF spots done (as shown in figure 95); ID number, reference numbers, elemental peaks and possible pigments used.

| Location | Description | Primary elements detected | Possible Pigments |
|---|---|---|---|
| 474 | Ground layer | **Pb**, Ba, Ca, Fe, Zn | White Lead, Bone Black |
| | | | |
| 472 | Yellow<br>Y1 | **Zn**, **Pb, Fe,** Cr, Hg, *Ba*, *Ca*,*S*, *Al* | Barium Chrome Yellow, Yellow ochre, Bone Black |
| 468 | Yellow<br>Y2 | **Zn, Pb,** Fe, *Ca*, *Hg*, *Cr*,*S*,*Al* | Mars Yellow, Yellow Chrome, Cinnabar, Bone Black |
| | | | |
| 459 | Yellow/white<br>Y3 | **Zn, Pb,** Hg, Ba, Fe, *Cr*, *Ca* | Zinc White, Bone Black, Titanium White, |
| | | | |
| 471 | Red<br>R1 | **Pb, Zn, Hg**, Ca, Ba, *Cr* | Burnt Umber, Red Ochre, Burnt Sienna, Cinnabar, Bone Black |
| Location | Description | Primary elements detected | Possible Pigments |

| | | | |
|---|---|---|---|
| 464 | Purple<br>P1 | **Zn, Pb, Fe,** Hg, Ba, Cr, Ca | Burnt Umber, Red Ochre, Burnt Sienna, Cinnabar, Manganese Blue, Prussian Blue, Bone Black |
| | | | |
| 462 | Blue<br>B1 | **Zn, Pb, Fe, Hg, Co**, Ca, *Ba, Cr, Sn* | Manganese Blue, Prussian Blue, Bone Black |
| | | | |
| 465 | Orange<br>O1 | **Zn, Pb, Hg, Fe,** Cr, Ba, Ca, Mg | Cinnabar & Yellow Chrome, Bone Black, Green earth |
| 463 | Orange<br>O2 | **Zn, Pb, Hg**, Cr, Fe, *Ba*, *Ca*, Mg | Cinnabar & Yellow Chrome, Bone Black, Green earth |
| 456 | Signature<br>O3 | **Zn, Pb, Hg,** Cr, Ca, *Ba*, *Fe*, Mg | Cinnabar & Yellow Chrome,<br>Titanium white, Bone Black, Green earth |
| | | | |
| 467 | Green<br>G1 | **Pb, Zn, Hg,** Ca, *Cr* | Chrome Oxide Green, Bone Black |
| 469 | Green<br>G2 | **Cr, Zn,** Ca, Fe, Ba | Chrome Oxide Green Mixture of Prussian Blue & Mars Yellow |
| 457 | Green<br>G3 | **Zn, Pb, Cr**, Ca, Hg, Ba | Chrome Oxide Green Mixture of Prussian Blue & Mars Yellow, Barium Chrome Yellow |
| 461 | Green<br>G4 | **Pb, Cr, Zn,** Fe, *Ca, Ba,* | Chrome Oxide Green Mixture of Prussian Blue & Mars Yellow, Bone Black |
| 466 | Green<br>G5 | **Pb, Zn, Cr, As,** Ca, *Ba, Fe* | Chrome Oxide Green Mixture of Prussian Blue & Mars Yellow, Bone Black |
| 470 | Green<br>G6 | **Zn, Hg, Pb,** Cr, Fe, *Ba, Ca* | Chrome Oxide Green Mixture of Prussian Blue & Mars Yellow, Cobalt Green, Bone Black |
| 458 | Green<br>G7 | **Pb, Zn, Fe,**Hg, Ca, *Cr, Ba* | Chrome Oxide Green Mixture of Prussian Blue & Mars Yellow, Barium Chrome Yellow, Bone Black |

### *4.4.2 The set Up*

I used a printed colour photograph of the painting to mark important XRF analysis spots. I then linked my notes and measurements to the actual position on the painting. I also asked my supervisor Maggi Loubser and colleges Laura Esser and Salomé Le Roux to assist me in collecting the data. In conservation it is of importance to work with fellow conservators who are trained in different field in order to share knowledge and discuss different ideas regarding the best approach to the project at hand.

I ensured that the beam of the spectrometer was not pointed at anyone while I used it. I made sure that the device was clean, and I wiped it after each test. I further placed foam bumpers on the spectrometer to avoid damage to the painting. I started by focussing on the major colours and then moved on the less prominent ones. It is important to constantly ensure that the data collected is sufficient and maintaining an effective work ethic. This ensures that all the data collected are done in the same manner and no inconsistencies are present (McGlinchey 2012:149). If it is not, the parameters need to be re-adjusted. I ensured this by vigorously taking notes of the whole process. These notes also helped in the post-processing analysis. I then compared all my data and looked for similarities and differences.

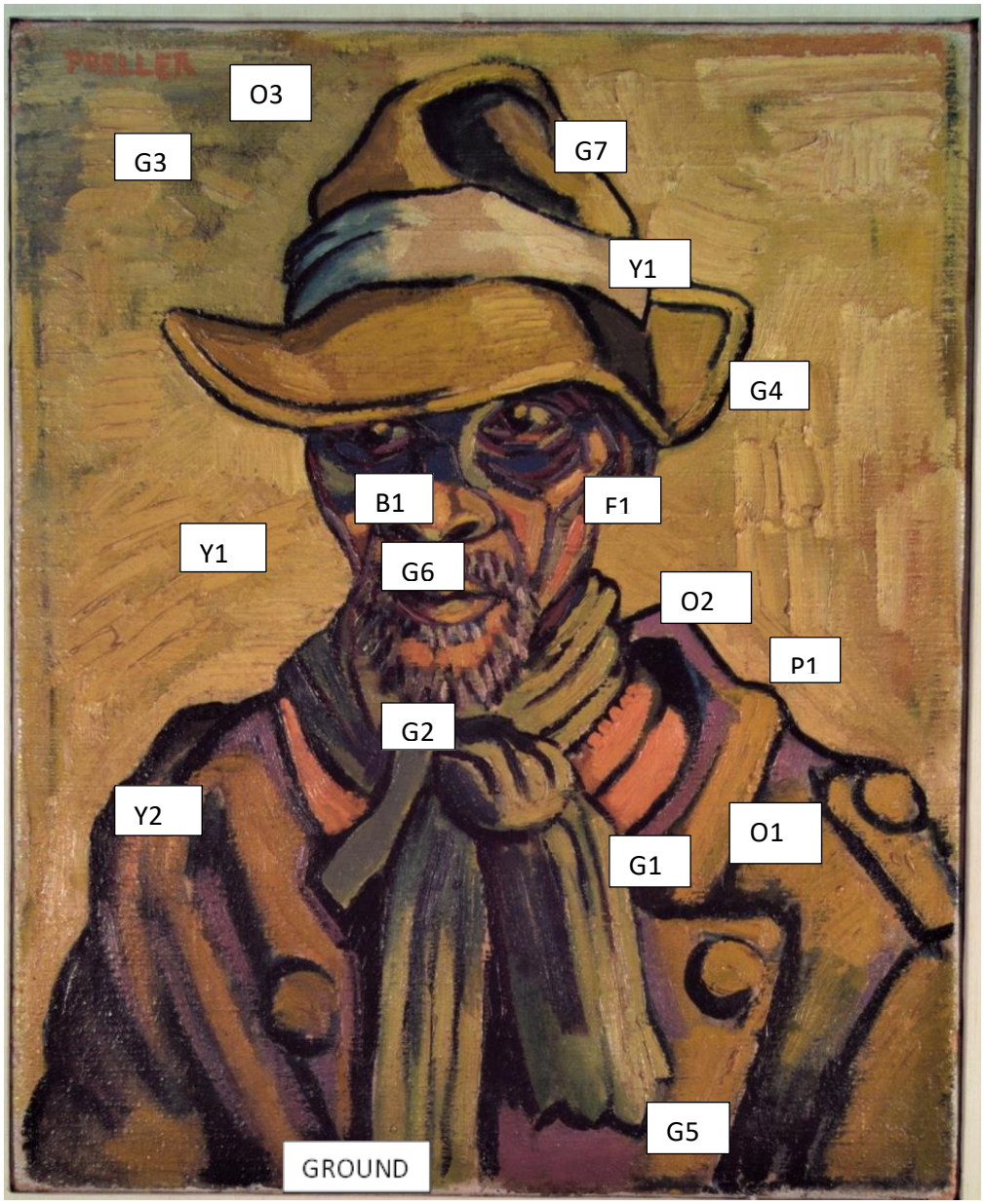



*Figure 95: Reference photo for XRF points of Alexis Preller, Man in the Sun, 1936. Oil on Canvas, 560mm x 467mm. Pretoria Art Museum, Pretoria.*
*Photographed by the author.*

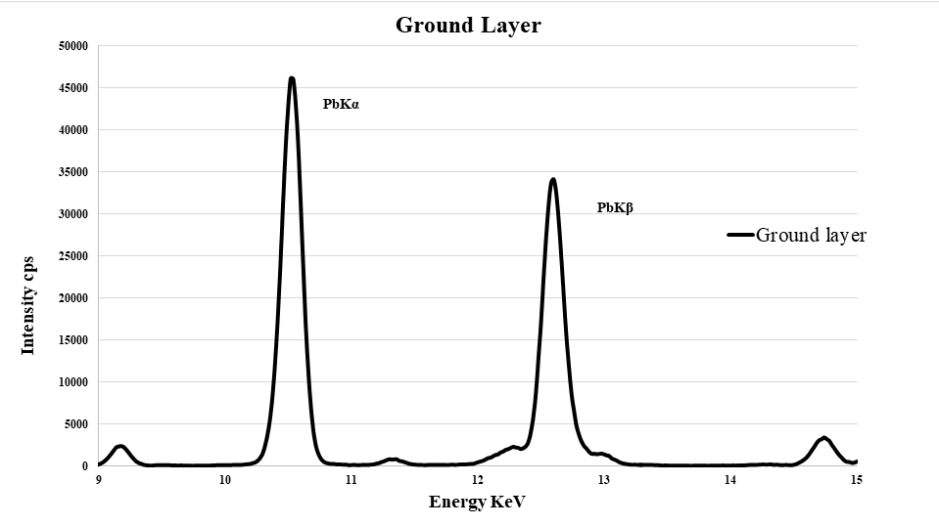



*Figure 96: Elemental peaks of the ground Alexis Preller, Man in the Sun, 1936. Oil on Canvas, 560mm x 467mm.*

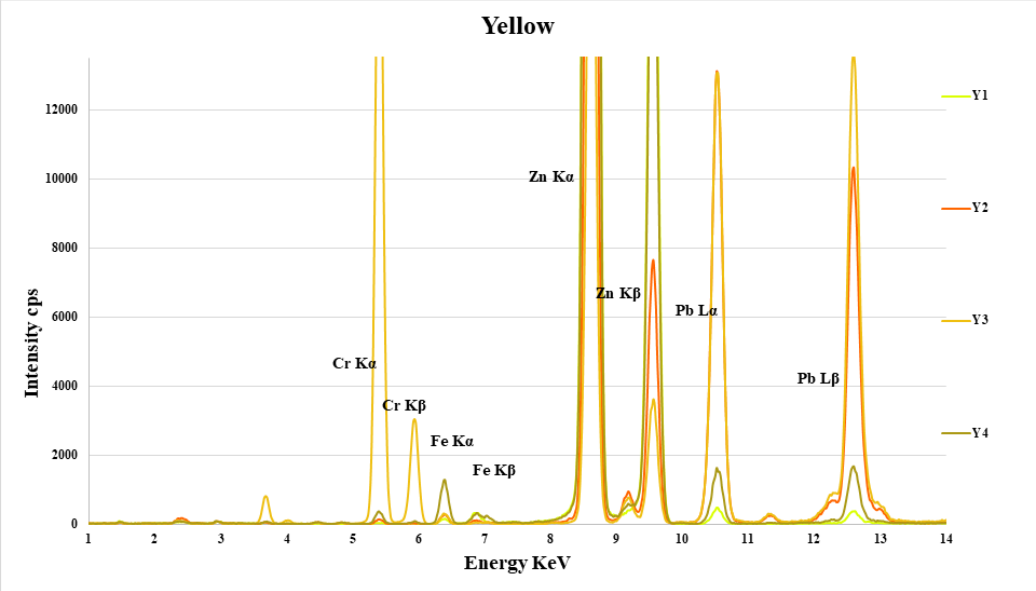



*Figure 97: Elemental peaks of the yellow pigments visible in Alexis Preller, Man in the Sun, 1936. Oil on Canvas, 560mm x 467mm.*

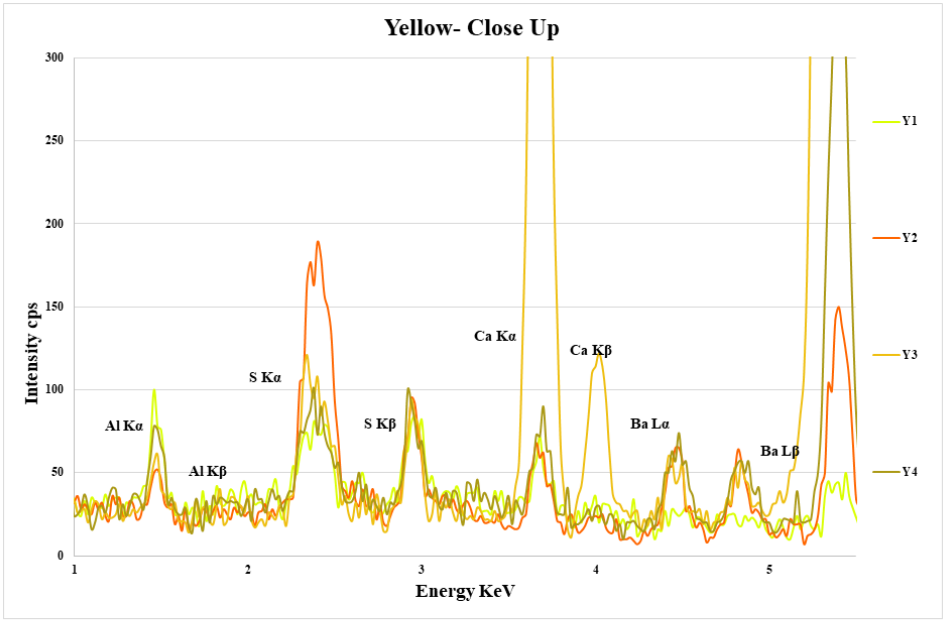



*Figure 98: Close-up elemental peaks of the yellow pigments visible in Alexis Preller, Man in the Sun, 1936. Oil on Canvas, 560mm x 467mm.*

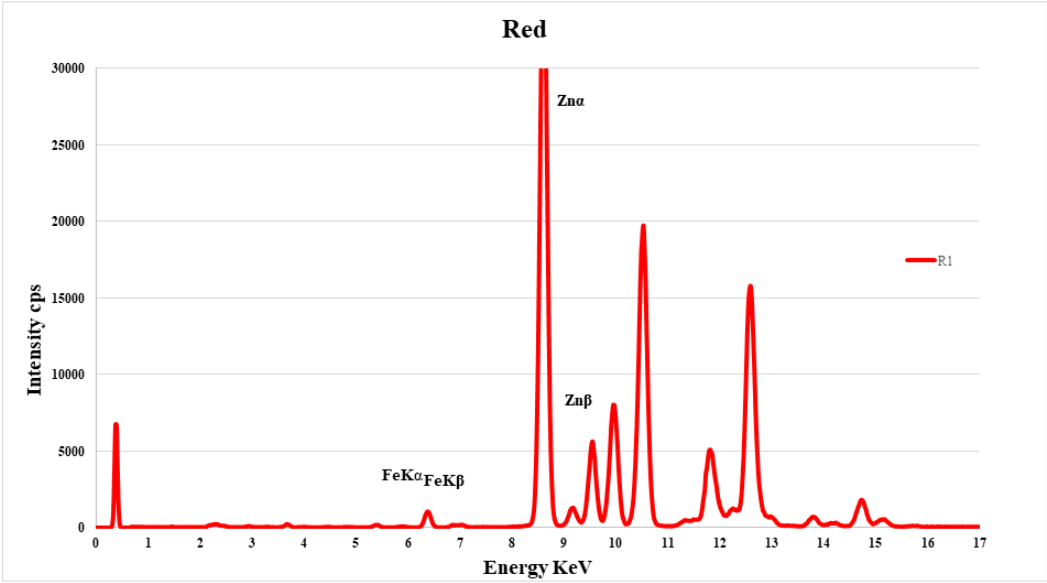



*Figure 99: Elemental peaks of the red pigments visible in Alexis Preller, Man in the Sun, 1936. Oil on Canvas, 560mm x 467mm.*

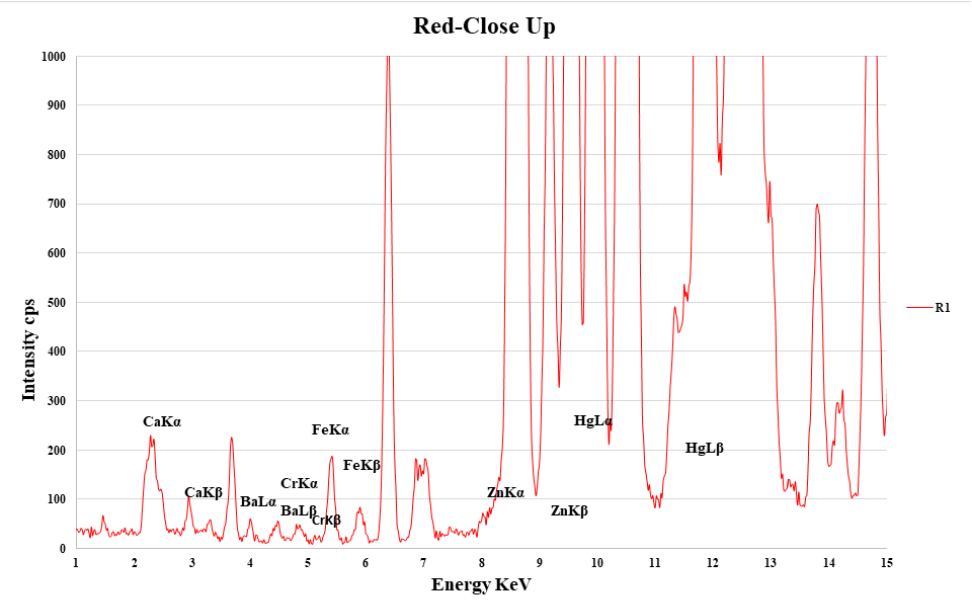



*Figure 100: Close-up elemental peaks of the red pigments visible in Alexis Preller, Man in the Sun, 1936. Oil on Canvas, 560mm x 467mm.*

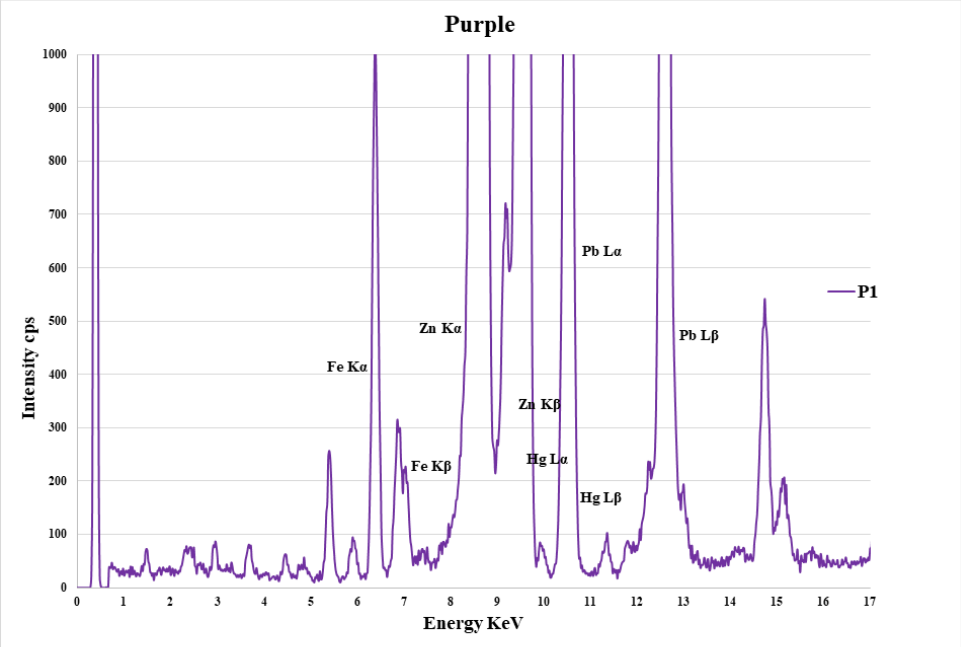



*Figure 101: Elemental peaks of the purple pigments visible in Alexis Preller, Man in the Sun, 1936. Oil on Canvas, 560mm x 467mm.*

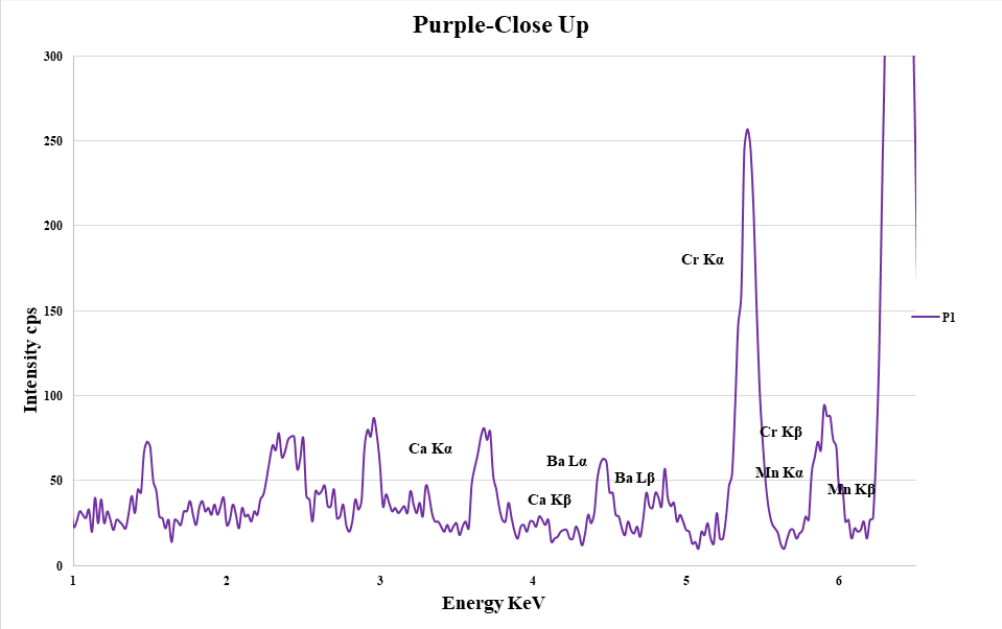



*Figure 102: Close-up elemental peaks of the purple pigments visible in Alexis Preller, Man in the Sun, 1936.Oil on Canvas, 560mm x 467mm.*

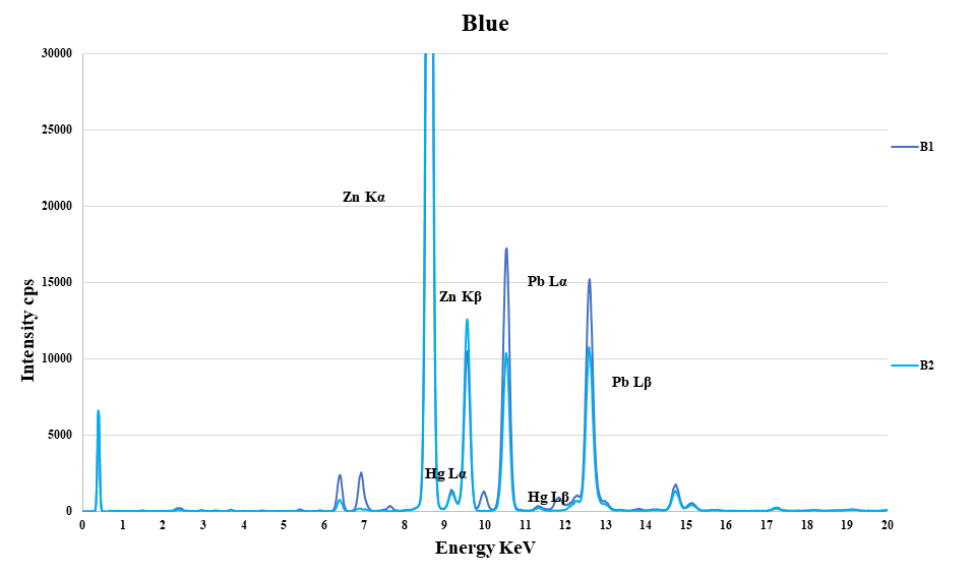



*Figure 103: Elemental peaks of the blue pigments visible in Alexis Preller, Man in the Sun, 1936.Oil on Canvas, 560mm x 467mm.*

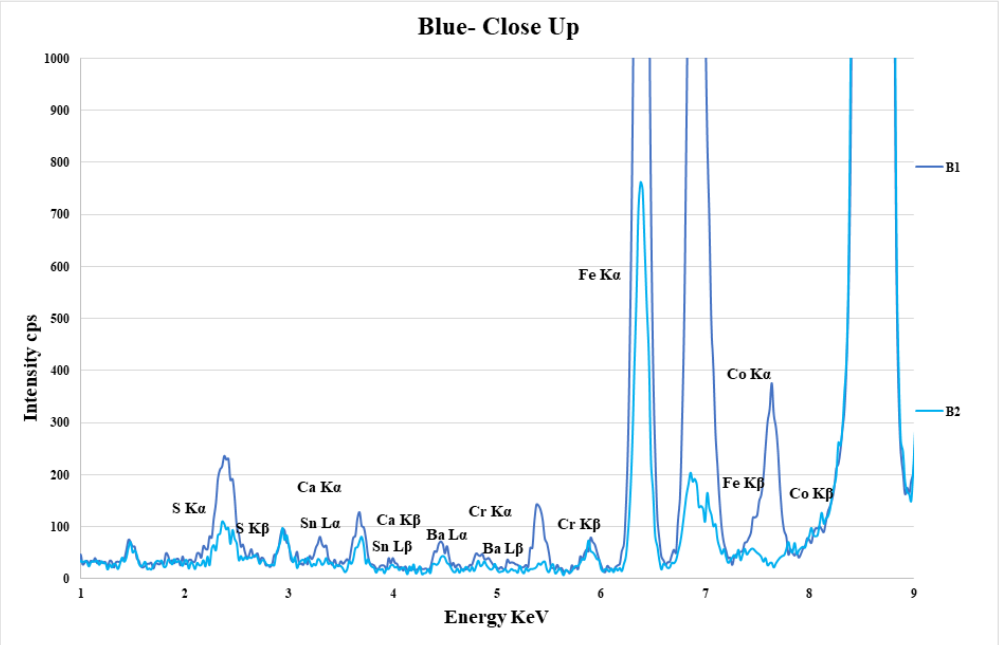



*Figure 104: Close-up elemental peaks of the blue pigments visible in Alexis Preller, Man in the Sun, 1936. Oil on Canvas, 560mm x 467mm.*

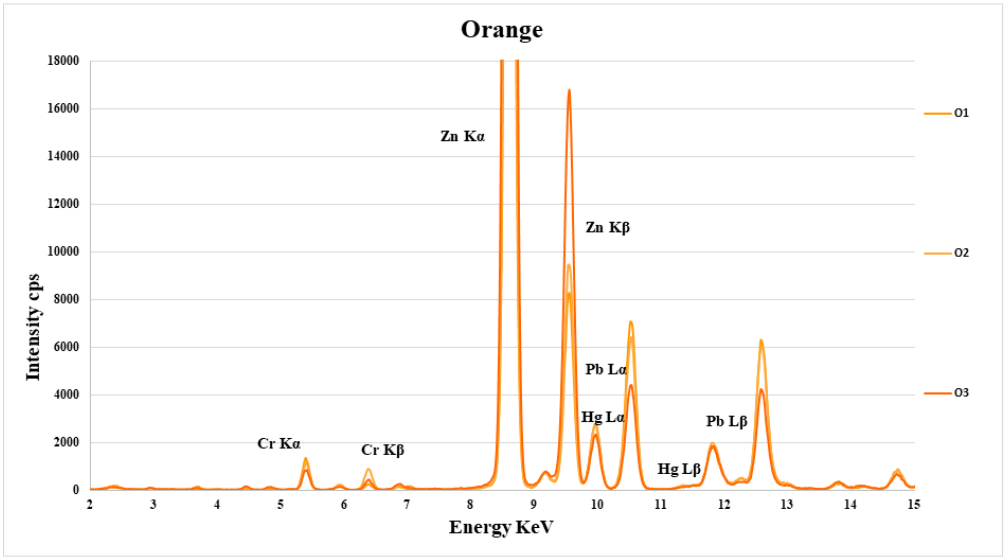



*Figure 105: Elemental peaks of the orange pigments visible in Alexis Preller, Man in the Sun, 1936.Oil on Canvas, 560mm x 467mm.*

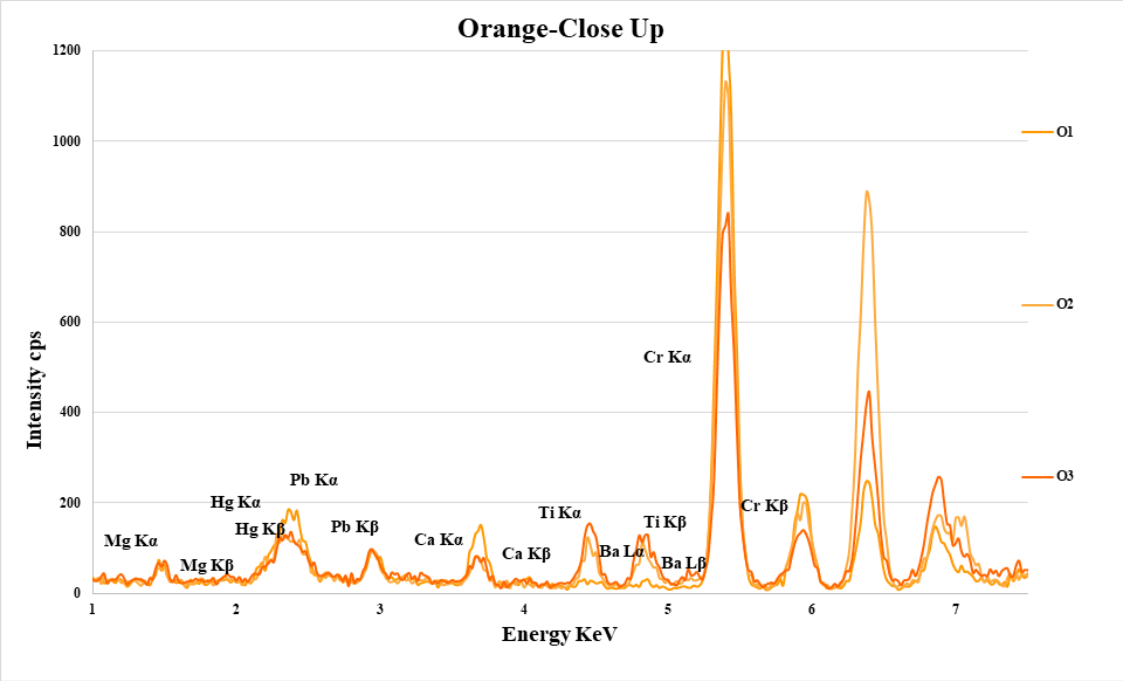



*Figure 106: Close-up elemental peaks of the orange pigments visible in Alexis Preller, Man in the Sun, 1936. Oil on Canvas, 560mm x 467mm.*

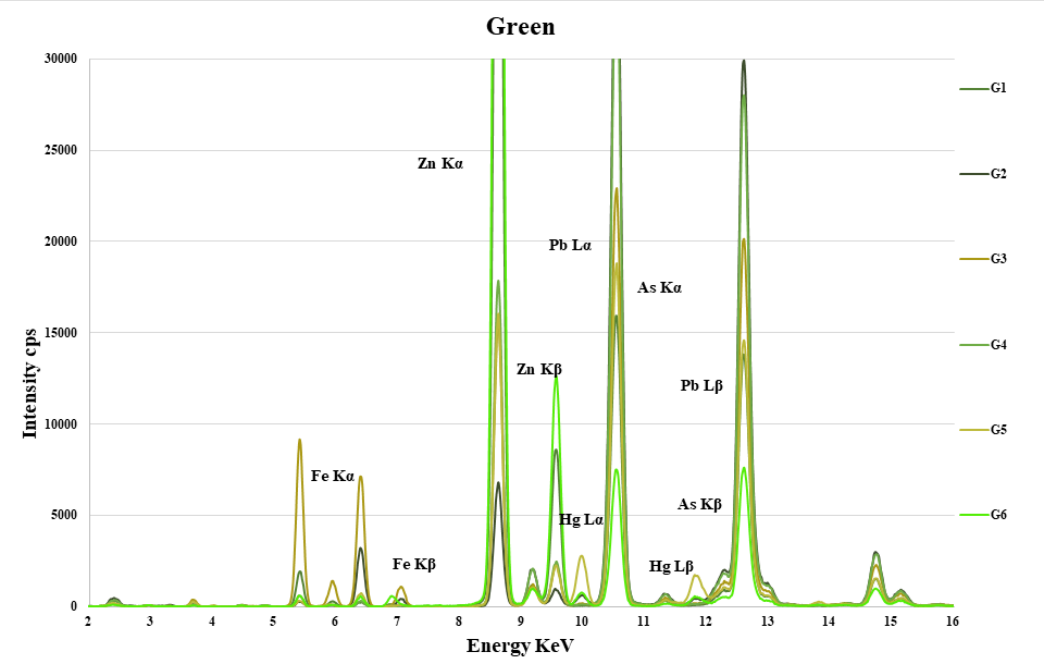



*Figure 107: Elemental peaks of the green pigments visible in Alexis Preller, Man in the Sun, 1936. Oil on Canvas, 560mm x 467mm.*

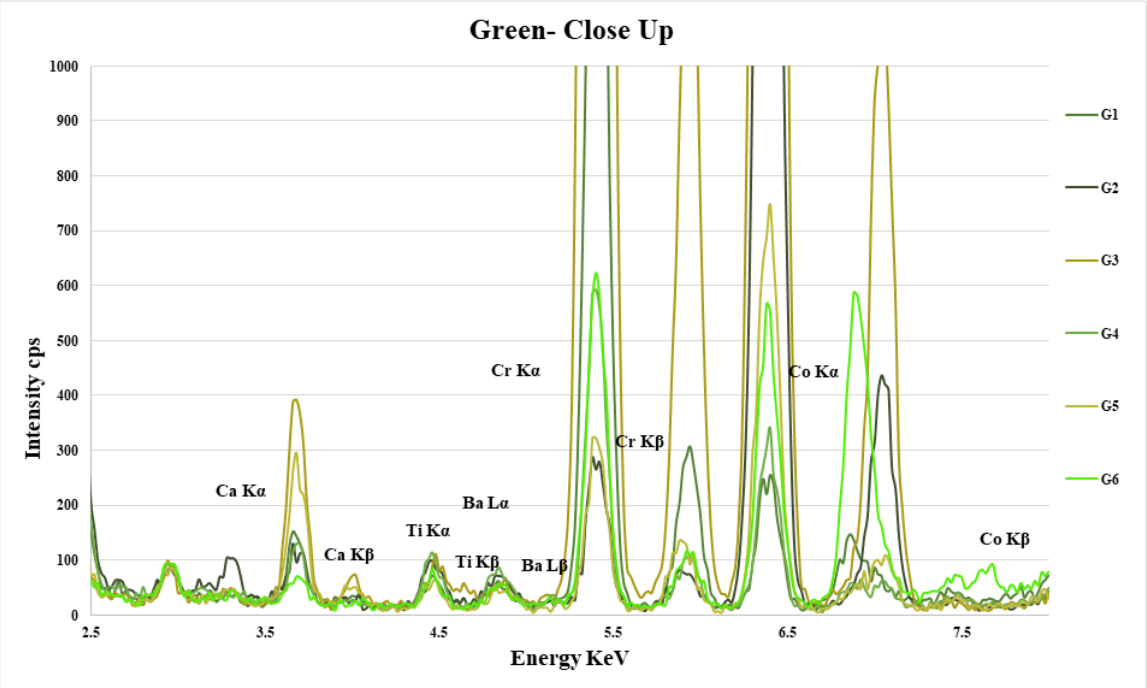



*Figure 108: Close-up elemental peaks of the green pigments visible in Alexis Preller, Man in the Sun, 1936. Oil on Canvas, 560mm x 467mm.*

In order to accurately identify pigments, multiple points must be collected from different locations on the painting that appears to be similar in colour (McGlinchey 2012:138). The bulk elements are easily identified through studying the K and L lines of the raw data. The Kα, β and or Lα, β lines should be clearly visible in order to identify an element clearly (McGlinchey 2012:151). If this is not the case, further investigation should be done.

Taking figure 106 to 108, it appears that ground layer of the painting is done with White Lead; this is possibly why lead is a recurring element found in all the spot analysis. This was also supported by gathering data from an unpainted area on the canvas (McGlinchey 2012:138). The evidence of Zinc White can be evidence of the artist's attempts to make his other colours lighter. The black lines evident in the work might be the reason for the Bone Black pigment constantly being evident in the data. The instrument has an 8mm collimator, so it is sometimes difficult to determine exactly the spot where the signal comes from, and a black line adjacent to the colour field you are analysing is easily included. The secondary colours (purple and orange) seem to be a combination of the colour used in the blues, yellows, and reds. It appears that not just one specific pigment was used, rather a variation of different pigments was mixed. Examples of this are seen in the use of different blues (Manganese and Prussian blues) and reds (Cinnabar, Red Ochre, Burnt Umber and Burnt Sienna). The loose brush strokes leave some of

the ground layer exposed and the black outline of the figure is evident in the pigments, which grants us insight into the technique the artist used.

Paintings consist of multiple layers, and it is important to keep this in mind. The varnish, binder used, the ground layer and the support should also be considered. When this is taken into account, it becomes clear that research and practice are crucially important when analysing the data. Artists usually use a combination of colours, and this should be kept in mind. It is also common for an artist to add other pigments to a colour to change the tone. This explains why it is often difficult to identify each pigment with absolute certainty. The study did however reveal pigments that were used as well as grant insight into the techniques employed by Preller.

### *4.4.3 Post-processing*

After the data was collected, I made a few 'crib notes' to work from in order to put my data in a neat readable format (these notes included an excel spread sheet with the results collected, figure 109). I used Bruker's software to analyse the results, Artax and Bruker Instrument Tools, software. I found that both programs had different advantages and disadvantages. The result was that working with both gave me a better understanding how to analyse the data collected. The final step was to convert the data, relevant to the study, into PowerPoint as a graph showing the peaks of certain elements.

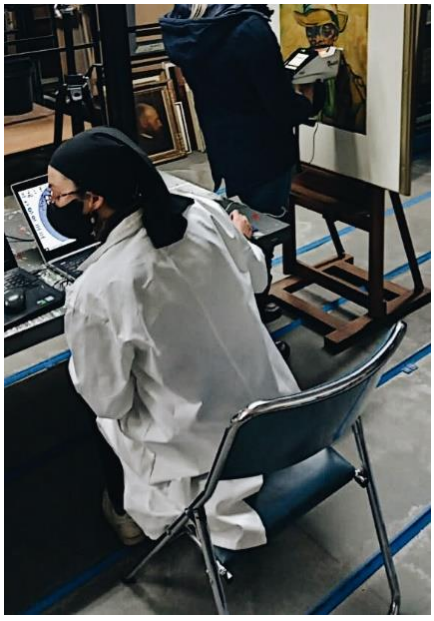


*Figure 109: XRF done on, Man in the Sun, 1936.*
*Pretoria Art Museum, Pretoria.*
*Photographed by the author.*

### 4.5 Chapter Conclusion

Through this chapter it becomes clear that all the different techniques used provide vital information. For this reason, no one technique should be used in isolation, rather a combination of different techniques will provide the most definitive analysis. Each painter has their own techniques. This is a combination of their skill, style, and materials available. Investigating the techniques of artists provide invaluable background knowledge, which could only be beneficial when doing an analysis. Paintings are appreciated as a finished product; however, the complex nature of a painting goes beyond what we see and admire. A painting is a construction of many different components, each affecting the other in a different manner (Pye 2001:80).

# CHAPTER FIVE:

# CONCLUSION

## 5.1 Summary of chapters

This study attempts to establish what techniques and materials Alex Preller used in his work *Man in the Sun*. Even though, Alexis Preller is regarded as a renowned South African painter, there is very little information available regarding his style, methods, and techniques. A better understanding of this is needed to successfully conserve his work. Chapter One gives a brief summary of what the study entails as well as a literature review of the most relevant sources consulted.

The study sketches a history and biography of Alexis Preller in Chapter Two. The information was collected through books and archival material. Attention was paid to his techniques and the materials he used. Preller's career was looked at through visual imagery, which helped place the chosen artwork in a timeline. The chapter also used the available material to compile a list of past exhibitions and commissions. All of this information helps to frame insight into *Man in the Sun* in regard to how it was created in terms of technique and materials and for what purpose.

Chapter Three focused on the visual examination and documentation of the selected artwork. The visual examination and documentation were completed first. This is done in order to first document what I could see without the aid of a magnification and a USB microscope. These tools assisted in looking at the artwork in as much detail as possible and helped determine special characteristics about the materiality and techniques. I also consulted many local conservators in the field for any input they might have regarding the condition of this work. Furthermore, I used the Munsell Colour System to aid in the identification of specific hues, values and chromas in the artwork.

The provenance of the painting is supported through archival material and extensive research. Most of Preller's work was done with oil paint and although this could not be proven in this case, it is safe to assume that he used oil for *Man in the Sun* as well. The condition of the painting appears to be fair, even though there is visible surface deterioration. Despite the painting being in a reasonable state, intervention should be taken as soon as possible to ensure its stability and longevity.

Chapter Four explores what is going on beneath the visible surface to further clarify his artistic technique and style. This chapter also investigate what pigments might have been used in this work through XRF Spectroscopy. First, Technical Photography revealed that the artwork has significant damage to the support, as already suspected in the condition assessment in chapter Three. The reflected IR photography showed no under drawings and the signature disappears with the application of the IR filters.

As a final conclusion for this chapter, it can be said that the application of visual examination, documentation, technical photography and XRF proved successful in obtaining information regarding the condition of the painting. All these methods worked together in providing me with information about Preller's technique and the materials used for this work.

This research also hopes to emphasise the importance of the collaboration of curators, conservators, and conservation scientists. The preservation and conservation of *Man in the Sun* can only be successfully achieved through collaboration within these fields.

I would argue that perhaps the individual roles that these different fields have must be approached collaboratively. Eventually, conservation scientists, curators and conservators must work together to foster a platform for communication. Art conservation in South Africa, like the rest of Africa, is a relatively new endeavour. Moreover, we do not have the luxury of state-of-the-art equipment, tools or materials that are easily accessible in Europe and the US. However, creative problem solving can be achieved through sharing knowledge and resources.

To ensure that the integrity of a collection is preserved, both curators and conservators must recognise the shortcomings in their knowledge and training and seek the guidance of specialists. Conservators, conservation scientists and curators all have similar obligations to collect, study and conserve art of all cultures. Once the materials and the structure of the painting (in this case) are understood, we begin to answer questions regarding the condition and preventative care of the work. This understanding of the material and structure assists in understanding why and how change occurs over time.

Hopefully, I can return to the Pretoria Art Museum together with a team of conservation scientists, curators, and other painting conservators in order to start a dialogue on the suitable steps that need to be taken to stabilise or possibly restore Alexis Preller's *Man in the Sun*.

### 5.2 Contribution of study

This dissertation contributed to the identification and understanding of Alexis Preller's *Man in the Sun's* materiality and artistic techniques. The study established a process that can be duplicated in the research of other Preller artworks, as well as the work of other South African artists. Together, visual documentation, technical photography and XRF provided data that assisted me in better understanding the materials and techniques Preller used in *Man in the Sun*.

The importance of conservation in South Africa is brought to attention together with the initiation of a deeper understanding, not just regarding Preller's work, but all South African artists' materiality and techniques. The necessity for intervention by conservators and conservation scientists in our museums becomes evident throughout the study.

### 5.3 Limitations of study

XRF is one of the first tools used in pigment identification. However, paintings are layered structures made up of support, ground, and paint. Because of these layers and the heterogeneity of pigments, correct interpretations of data are not as clear as one might expect. Also, taking the painter's technique and style into consideration (in this case, heavily textured paint) plays an important part in how much valuable data can be provided through this analytical technique. Furthermore, because of absorption and scattering during air-path analysis, lower atomic number elements found in traditional natural dyes or modern organic pigments will go undetected or will reveal only broadly scattered radiation. Another concern is that certain elements can conceal other elements. Because of the multi-layered nature of this painting and the thick application of paint, some areas may have limited access and may conceal certain valuable information (McGlinchey 2012:138).

The study presented limitations in two areas: the correct photography set-up on the site and access to complementary analytical techniques such as Raman spectroscopy and FTIR spectroscopy which could identify organic pigments and binders as well.

### 5.4 Suggestions for further research

For the specific identification of pigments, binding mediums, fillers and extenders, more invasive techniques, such as FTIR or Raman spectroscopy, could be employed. These methods should be used together, as it is important to recognise that no single analytical method can answer all the questions a conservator might have. Furthermore, it is important to continue the methodology developed in this dissertation to Alexis Preller's later works and see if his materials changed or his technique and style. In order to attain a full rounded understanding of the materiality of an artist, a database of their complete work must be created. This is the first step in building a database of the materiality of South African Artists

# SOURCES CONSULTED

*A Primer for the Materials, Methods and Techniques of Conservation*. [Sa]. [O]. Available: https://ncartmuseum.org/pdf/conservation-primer.pdf

Accessed 29 February 2021.

Arcy Art Original Oil Paintings, South African Art, International Art. *Alexis Preller - South African Artist, Oil Paintings, Paintings 1911 – 1975*. [Sa]. [O]. Available: Alexis Preller - South African Art History - South African Historical Artists (arcyart.com) Accessed 4 May 2021.

Barni, M. Pelagotti, A. & Piva, A. 2005. Image processing for the analysis and conservation of paintings: opportunities and challenges. *IEEE Signal Processing Magazine* 22(5):141–144.

Berman, E. 1970. *Art and artists of South Africa; an illustrated biographical dictionary and historical survey of painters and graphic artists since 1875.* Cape Town: A.A. Balkema.

Berman, E. & Nel, K. 2009. *Alexis Preller: Africa, the Sun and Shadows and Alexis Preller*. Saxonwold: Shelf Publishing.

Bezur, A. Lee, L. Loubser, M. & Trentelman, K. *2020. Handheld XRF in Cultural Heritage.* Los Angeles: The Getty Conservation Institute.

Bezur, A. & Sperber, R. 2016. *Instrumental Analytical Techniques for Cultural Heritage: Technique Overview*. Unpublished handout. New Haven, USA: Institute for the Preservation of Cultural Heritage.

Boersma,F, Brokerhof, AW, Berg SVD & Tegelaer,J. 2007. *Unravelling textiles: A handbook for the preservation of textile collections*. London: Archetype Publications Ltd

*Bonhams: Alexis Preller (South African, 1902-1962) 'At work at Westoe'*. [Sa]. [O]. Available: https://www.bonhams.com/auctions/22363/lot/35/ Accessed 22 February 2021.

*Care of Paintings. Canadian Conservation Institute, aem*. 2017. [O].Available at: https://www.canada.ca/en/conservation-institute/services/workshops-conferences/regional-workshops-conservation/care-paintings.html Accessed 11 February 2021.

Casini, A.,Lotti, F., Picollo, M., Stefani, L., & Buzzegoli, E. 1999. Image spectroscopy mapping technique for non-invasive analysis of paintings, *Studies in Conservation*, 44(1):39–48.

Cosentino, A. 2015. Cultural Heritage Science Open Source. *International journal of conservation science*, 6(3). July-September 2015.

Cycleback, D. 2017. *Authenticating Art and Artifacts: An Introduction to Methods and Issues*. [S1]: Hamerweit Books.

Deichmann, J.R. 1986. *Die werke van Alexis Preller 1934-1948 en n catalogue raisonné*. Pretoria: University of Pretoria.

Desnica, V. & Schreiner, M. 2006. A Lab-VIEW-controlled portable x-ray fluorescence spectrometer for the analysis of art objects. *X-Ray Spectrometry* 35(1):280–286.

Erhardt,D. Mecklenvurg, MF.1994. *Accelerated vs. natural aging: Effect of aging conditions on the aging process of cellulose*. In *Materials issues in art and archaeology IV*: symposium held May 16-21, 1994, Cancun, Mexico. Warrendale; Pennsylvania; United States: Materials Research Society, 1995. pp.247-270,

Ferretti, M. 1993.*Scientific investigations of works of art*. Rome: ICCROM.

Folch, MO. 2011. *Non-destructive condition assessment of painting canvases using NIR spectrometry*. University De Barcelona, Faculty of Fine Arts Painting Department Conservation Section. [O]. Available:

file:///C:/Users/danie/Downloads/MOF_PhD_THESIS%20(1).pdf

Accessed 9 August 2021.

Frey, F., Heller, D., Kushel, D., Vitale, T. & Weaver, G. 2008. *The AIC guide to digital photography and conservation documentation,* edited by J Warda. 3rd ed. Washington, DC: The American Institute for Conservation of Historic and Artistic Works.

Garside,P & Wyeth,P. 2006. *Textiles*. In May,E & Jones, M. *Conservation science: Heritage materials*. Cambridge: RSC Pub., 2006. pp.56-91.

*Glossary for paintings*.2020. [O]. Available:

http://www.art-conservation.org/?page_id=1170

Accessed 19 July 2021.

Hackney, S. 2020. *On Canvas: Preserving the Structure of Paintings*. Getty Publication: Los Angeles.

Hackney, S. 1984. The Distribution of Gaseous Air Pollution within Museums. *In Studies in Conservation*. International Institute for Conservation of Historic and Artistic Works, 1984, vol. 29, pp. 105-116.

Harmsen, F. 1985. *Looking at South African Art: A guide to the study and appreciation of art*. Pretoria: J.L van Schaik.

Johnston-Feller, R. 2001. *Color Science in the examination of museum objects: nondestructive procedures.* Los Angeles, USA: Getty Publications

Kirsh, A. & Levenson, R.S. 2000. *Seeing Through Paintings: Physical Examination in Art Historical Studies*. Yale University Press: New Have.

Know your Paintings – Structure, Materials and Aspects of Deterioration. *Canadian Conservation Institute, aem*. [O]. Available at:

https://www.canada.ca/en/conservation-institute/services/conservation-preservation-publications/canadian-conservation-institute-notes/know-your-paintings-deterioration.html

Martin, J.2007. *Fakes and Forgeries: The art of deception*. London: British Museum Press.

McGlinchey, C. 2012 *Handheld XRF for the examination of paintings: proper use and limitations* in *XRF for Art and Archaeology*. Shugar, A.N & Mass L.J. Leuven University Press: 131-158.
Nevell, TP & Zeronian, SH. 1985. *Cellulose chemistry and its applications*. Chichester: Ellis Horwood

Mills,J.S & White,R. *MATERIALS INFORMATION and TECHNICAL RESOURCES for ARTISTS - Flexible Supports*.[O].Available:

https://www.artcons.udel.edu/mitra/Documents/Flexible-Supports.pdf

Accessed 10 June 2021.

Mills,J.S & White,R. 1987. *The organic chemistry of museum objects*. London: Butterworth-Heinemann.

Mozir,A. Strlic,M, Trafela,T. Cigic,I.Kolar,J. Deselnicu,V & De Bruin,G. 2011. *On oxidative degradation of parchment and its non-destructive characterisation and dating. In Applied Physics*. Materials Science & Processing. (1):104, 211-217.

Ogilvie, G. 1988. *The Dictionary of South African Painters and Sculptors.* Rosebank, Johannesburg: Everard Read.

Pedersoli, JL & Antomarchi, C & Michalski, S. 2016. *A Guide to Risk Management of Cultural Heritage*. Canadian Conservation Institute

*Pigments Through the Ages*. [Sa]. [O]. Available:

Available: http://www.webexhibits.org/pigments/intro/visible.html

Accessed 19 July 2021.

Pye, E. 2001. Caring for the Past: Issues in Conservation for Archaeology and Museums. James & James: London.

*Research and Technical Analysis* [Sa]. Arts Conservation International. [O]. Available at:

http://artsconservationinternational.com/en/rechisches-et-analyses-scientifiques/

Accessed 21 February 2021.

Rizzo, A & Burnstock, A. 2003. *A review of the effectiveness and effects of de-acidification of linen, cotton, and flax canvas after 17 years of natural ageing*. London: UKIC.

Rizzutto, M & Fleury Curado, J & Bernardes, S & Campos, P & Kajiya, E & Silva, T & L. Rodrigues, C & Moro, M & Tabacniks, M & Added, N. 2015. *Analytical techniques applied to study cultural heritage objects*. São Paulo, Brazil October: 4-9

Stoner, J. H. & Rushfield, R. 2012.*Conservation of Easel Paintings: Principles and Practice*. New York: Butterworth-Heinemann.

Strilic,M & Kolar,J.2015.*Degradation and stabilisation of cellulosic materials*. London: Archetype Publications Ltd

Stuart, B. 2007. *Analytical Techniques in Materials Conservation*. West Sussex: Wiley.

Taft, W.S. & Mayer, J.W. 2000. *The Science of Paintings.* New York: Springer-Verlag.

Van Horn, Culligan, H & Midgett, C. 2015. *Basic Condition Reporting a Handbook*. Rowman & Littlefield: London.

**Personal Communication**

Grace Welsh (practicing painting conservator and restorer in Cape Town).

Sandra Markgraaf (practicing painting conservator and restorer at the University of Pretoria).

Dirk Oegema (Functioning head of museum services at the Pretoria Art Museum)

CITY OF TSHWANE
IGNITING EXCELLENCE

Community and Social Development Services
Museum Services

Pretoria Art Museum | Corner Francis Baard and Wessels Streets | Arcadia Park | Arcadia | 0083
PO Box 40925 | Arcadia | 0007
Tel: 012 358 6750
Email: art.museum@tshwane.gov.za | www.tshwane.gov.za

| | | | |
|---|---|---|---|
| My ref: | Preller Technical Analysis | Tel: | 012 358 6750 |
| Your ref: | Preller - Pta Art Museum | Fax: | |
| Contact person: | D Oegema | Email: | dirko2@tshwane.gov.za |
| Section/Unit: | Museums | | |

Daniéle Knoetze
University of Pretoria

17 June 2021

Dear Me. Knoetze,

**PERMISSION TO CONDUCT A TECHNICAL ANALYSIS AND RESEARCH ON THE ALEXIS PRELLER ARTWORK: MAN IN THE SUN**

We herewith give you permission to conduct a non-invasive technical analysis on, and research of, Alexis Preller's 'Man in the Sun'. We believe the in-depth study of the artwork will give insight into the materials and techniques used by Alexis Preller and will be of immense help in e.g. future restoration of his artworks.

The only condition from our side is that the technical analysis on the artwork is conducted at the Pretoria Art Museum and that the artwork is not removed from the Museum. We will allocate for you a space that will meet your requirements while you conduct your analysis.

Wishing you the best with your research and studies.

Yours faithfully,

Dirk Oegema
FUNCTIONAL HEAD: MUSEUM SERVICES

On request, this document can be provided in another official language.