

**EXPLORATION OF CAMEL AND COW BONES AS AN ALTERNATIVE MEDIUM OF
EXPRESSION IN SCULPTURE**

BY

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DEDICATION

This project is profoundly dedicated to the Almighty God

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ABSTRACT

Material exploration has become a fixture in art production, particularly in sculpture. Artists derive academic and research satisfaction from the intentional pursuit of novel materials for sculptural pieces, drawing inspiration from diverse philosophical perspectives within their immediate environment. However, the researcher has observed that much exploration seems not to be observed in animal bone assemblage. In effect, the study was an attempt to adopt a procedure for maceration of skull and techniques for modeling the skull into low relief, high relief, and sculpture in the round, and mix-media sculptures.

Methods used in this study is studio exploration methodology. The creative use of animal skulls specifically camel and cow skull and components employed to produce variety sculpture images. The works are both in the round and relief forms. It focused on the use of the unique anatomical structures, textural characteristics and inherent aesthetic potentials of these skulls.

The study revealed that animal skull can be clinically treated and used as a medium of expression in sculpture through carving techniques such as cutting/slicing, engraving drilling and assemblage. It was observed that during the study technique and method employed were able to produce sculptural works like “Motherhood passion”, “Exodus”, “Political Thieves”, “Awon Amuludun”. It was therefore recommended that other animal skull bones and bone parts should be explored to produce sculptural artworks based on the unique inherent qualities observed in the skull of camel and cow. It was also envisaged that this study would serve as a source of references to scholars and a source of inspiration to other artists and art critics.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

On February 8, 2017, the Sculpture Studio of the Department of Fine and Applied Arts at the Federal College of Education (Technical), Bichi, Kano State, recorded a significant studio accident. While operating an angle grinding machine, the researcher suffered a critical injury caused by the sudden malfunction of the angle grinder which was likely due to a power surge. The incident led to deep cuts and fractures of the phalanges of the left thumb and forefinger, requiring emergency medical attention and surgery. (Figure 1 and 2).

Figure 1

The Researchers Injury (Front View)



Photo By: Osiboye Mojisola, 2017

Figure 2

The X-Ray of the Broken Phalanges



Photo By: Osiboye Mojisola, 2017

During the orthopedic treatment, metal rods and screws were used in a procedure known as external fixation to stabilize the broken bones (Figure 3). As the researcher spent days recovering in the orthopedic hospital, witnessing several surgical operations

involving bones and metal implants, a conceptual link between orthopedic procedures and sculptural practices began to emerge.

Figure 3

Series External Fixation Fixator-Distal tibia semicircular frame



Retrieve from <https://www.jsshuangyang.com/8-0-series-external-fixation-fixator-distal-tibia-semicircular-frame-product/> April 4 2023

Figure 4

Series External Fixation Fixator-Tibia Frame



Retrieve from <https://www.jsshuangyang.com/8-0-series-external-fixation-fixator-tibia-frame-product/> April 4 2023

This traumatic, yet thought provoking experience became a turning point in the researcher's artistic exploration. The precise and structured approach to joining broken bones with metal implants (Figure 4) resonated with the technical aspects of sculptural assemblage. The idea of using bones, particularly animal skulls, and combining them with metallic materials such as metal scrap, screw, bolt, metal rod, bolt, washer and nut began to form a new creative vision in the researcher. The researcher further drew inspiration from the observation that bones, often regarded as waste and not an ideal sculpture material could be treated, preserved and transformed into expressive materials of creative expression that could be suitable for artistic production. This aligns with broader practices of up-cycling and material repurposing in the arts.

Furthermore, up-cycling, reuse and recycling have long played a role in both functional and creative endeavors. From prehistoric times when bones were repurposed into tools, to contemporary efforts that emphasize sustainable art, the reuse of discarded materials reflects a deep tradition of transformation and value re-creation. The U.S. Environmental Protection Agency (US EPA, 2014) defines recycling as the process of collecting and repurposing waste to create new products, while Wegener (2016) explains that up-cycling reclaims materials not by destroying them, but by giving them new value and purpose. James (2007) similarly notes that used materials, such as old clothing or furniture, can be reimagined to serve new artistic or utilitarian functions. Against this backdrop, the researcher's experience not only transformed the perception of bones as a sculptural material but also established a foundation for this study, which investigates the creative, symbolic, and sustainable potential of bone (skull) and metal assemblage in contemporary sculpture.

1.2 Statement of the Problem

In contemporary art practice, one of the major issues that confront artists is the constant search for new and unconventional materials, forms, and techniques that will expand the boundaries of visual expression. This research therefore explores animal skulls particularly those of camels and cows as alternative sculptural media, in response to this growing demand for novel materials. However, the study is not only born out of artistic curiosity, but also shaped by personal and societal concerns surrounding the improper disposal and use of animal bones in our environment.

A troubling concern highlighted by this study is the seldom improper disposal and neglect of animal bone waste in many communities, which creates both environmental and security risks. A distressing example occurred on January 18, 2020, when a female colleague was violently attacked and stabbed with a sharpened bone, revealing how unused bone can become a weapon when left unmanaged. This incident exposes the overlooked danger of mismanaged bone materials and underscores the urgent need for creative intervention. The study therefore addresses this gap by seeking to transform bones from harmful, discarded objects into meaningful sculptural resources. By repositioning bone waste as material for artistic expression, the research addresses safety concerns while contributing to environmental responsibility and contemporary studio practice.

Persistent cultural perceptions in many communities associate skulls and bones with fear, superstition, ritual practices, and occult activities. Such beliefs create psychological and social barriers that discourage their creative reuse in artistic production. This stigma limits awareness of the aesthetic, conceptual, and material

potential of camel and cow skulls as viable sculptural resources. The problem, therefore, lies in the continued misinterpretation of these materials as objects of taboo rather than tools for artistic innovation (Douglas, 1966; Turner, 1967; Gell, 1998). The study is justified as it seeks to challenge and transform these entrenched fears by recontextualising skulls as safe, meaningful, and aesthetically valuable. This approach not only expands studio practice but also encourages a broader cultural acceptance of alternative artistic materials.

1.3 Research Questions

The following Research Questions were raised to guide the study:

1. What are the possibilities that exist in the use of animal bones in sculpture?
2. What ways can images be conceptualized and actualized using skulls and their individual parts, in order to unveil their inherent aesthetic qualities and potential in sculpture?
3. How can rhythmic sculptural expressions be created through the arrangement and manipulation of camel and cow skull parts?
4. Can mixed-media sculptures be produced by combining skulls and their parts with metal and acrylic paint to create contrast?
5. Which methods of preserving bone can be explored to retain its natural colour and texture during and after the production of sculptures?

1.4 Aim and Objectives of the Study

Aim

The aim of the study is to explore camel and cow skulls, as unconventional materials for contemporary artistic expression in sculpture.

Objectives

The following are the objectives of this research:

1. To determine the opportunities that exist in use of animal bones in sculpture.
2. To conceptualize and actualize visual images using skulls and their individual parts, with the aim of unveiling their inherent aesthetic qualities and sculptural potential.
3. To create rhythmic sculptural expressions through the thoughtful arrangement and manipulation of skull fragments.
4. To produce mixed-media sculptures by combining skulls and their parts with other art materials, specifically metal and acrylic paint.
5. To explore various methods of preserving bones in order to retain its natural colour and texture during and after the process of producing sculpture.

1.5 Significance of the Study

A critical observation of a mature animal skull and its components reveals the intricate creative complexities embedded in nature itself. The structural intricacies of inlets and outlets, the definite forms and contours, the off-white and concrete texture of the bone, and the brittle, glassy sound it produces all contribute to its visual and material

uniqueness. These features give the skull an almost ceramic-like and inorganic quality that make it a rich medium for sculptural exploration.

Furthermore, the inherent strength and longevity of bones offer additional value to the artist. Studies in forensic anthropology and taphonomy indicate that while bones may decompose relatively quickly in humid environments, they can persist for extended periods (sometimes thousands of years) in dry or protected conditions, thereby making skull-based sculptures highly durable, especially in indoor environments (William D. Haglund & Marcella H. Sorg, 1997; Clark Spencer Larsen, 2015).

This study is therefore significant for several reasons. First, it provides artists and scholars with practical and scholarly insight into the use of animal skulls particularly camel and cow skulls as unconventional yet powerful media for sculpture production. It expands the scope of materials available for creative exploration and introduces new methods for sourcing, treating, and manipulating bones safely and artistically. The study also acts as a stimulus for students, professional artists, art educators, art historians, and environmental advocates to reconsider the aesthetic, academic, and ecological value of skulls, not merely as symbols of death or objects of superstition, but as durable and meaningful media of visual expression.

Additionally, the study contributes to the growing discourse on up cycling in the visual arts, promoting sustainability through the transformation of what might otherwise be environmental waste into culturally, symbolic and artistically significant artworks. It also serves as a reference document for future researchers who wish to explore bones and skulls for further expressions in art, practice.

1.6 Scope

This study explores the creative use of animal skulls specifically camel and cow skulls and their component as unconventional materials for the production of sculptures. The research focused on the unique anatomical structures, textural characteristics, and inherent aesthetic potentials of these skulls. Both animals present distinct skull features, with the exception of the teeth, which appear relatively similar. Key parts such as the cranium, eye socket, nasal cavity, upper jaw, and lower jaw provided the structural and conceptual framework for most of the artworks produced. Skulls or skull components remained the consistent element, either as focal points or fully represented forms in all compositions.

In addition to skulls, the study also utilized other bone components such as the metacarpus, radius, ulna, humerus, metatarsus, tibia, femur, and humerus, all sourced from the same animal species to maintain material integrity. These additional elements were seldom used but proved effective in achieving desired compositional balance. The integration of other artistic media especially metal fragments and acrylic paint demonstrates the compatibility of skulls with other materials.

In all, the study was deliberately limited to the exploration of camel and cow skulls and their components within the context of sculpture production. It did not extend to the chemical processing of bones or to the use of human or other animal skulls. This intentional boundary emphasizes ethical sourcing, material specificity, and creative focus, ensuring the study remains both contextually grounded and artistically relevant.

1.7 Limitations of the Study

Despite the creative and exploratory nature of this study, certain limitations were acknowledged. First, the study was restricted to only two animal species camel and cow due to accessibility. Other animal skulls that may possess different structural or aesthetic features were not explored, which may limit the generalizability of the findings across a broader range of skull materials.

Secondly, the study avoided any chemical treatment or transformation of the bone materials, relying solely on physical manipulation techniques such as carving, assemblage, drilling, slicing/cutting and polishing. As a result, it did not explore the potential of chemically preserved or artificially treated skulls, which may have yielded different sculptural outcomes or textures.

Another limitation lies in the geographic scope of material sourcing. Although efforts were made to diversify the sources across three Nigerian states Kano, Edo, and Ogun the availability of skulls, especially camel skulls, posed challenges in terms of quantity, quality, and logistics. This also affected the range of experimental repetition in some sculptural formats.

Lastly, this study was studio centered, focusing on the researcher's personal studio practice and conceptual direction. While it offers valuable insights into material potential and aesthetic application, its outcomes are subjective and may not represent broader artistic consensus or universal application.

CHAPTER TWO

LITERATURE REVIEW

This chapter deals with the literature which were reviewed under the following Sub-Headings

Theoretical Framework

- Theoretical Framework
- Conceptual Framework
- Contemporary Sculpture and Medium
- Meaning and History of Mixed Media
- The Use and Effect of Physical Changes in Recycled Materials in Art
- Reason for adopting Physical Change for Studio Exploration
- Reuse, Recycling, and Up-cycling in Sculpture
- Why the use of Skull?
- How to Clean and Prepare the Skull
- Reviews on Bone Artists and their Artworks
- Implication of the Review

2.1 Theoretical Framework

The theoretical framework for this study is grounded in material culture theory, eco-art principles, and critiques of anthropocentrism. Together, these perspectives guide the use of camel and cow skulls as sculptural media and explain how discarded or naturally occurring materials can be re-purposed within contemporary artistic practice.

Material culture theory provides the first foundation, emphasizing that physical objects carry cultural narratives, symbolic meanings, and embedded histories beyond their practical functions (Miller, 2005). Within this study, the skulls are approached not merely as anatomical remnants but as materials capable of holding cultural memory, spiritual references, and artistic identity. Their transformation in sculptural form becomes a way to reinterpret and extend these meanings.

This position aligns with eco-art theory, which stresses sustainability, ethical material use, and environmental consciousness. Kagan (2011) notes that eco-art encourages artists to adopt practices that conserve resources and rethink the lifecycle of objects. Up-cycling plays a key role in this approach. Hayes (2014) explains that up-cycling reduces waste, limits pollution, and conserves essential resources such as water, minerals, and timber. McDonough and Braungart (2002) further argue that up-cycling retains the integrity of materials while enhancing their aesthetic and functional value, allowing their original histories to remain visible rather than erased. These ideas support the study's commitment to transforming discarded skulls into meaningful sculptural expressions without divorcing them from their environmental and cultural origins.

A critique of anthropocentrism strengthens this framework by questioning human-centered interpretations of nature and considering humans and animals within a shared ecological continuum. Plumwood (1993) argues that hierarchical separations between species shape how materials are valued and interpreted. This perspective becomes relevant when examining artists such as Bruce Mahalski, whose bone-based installations sometimes combining human and animal remains challenge conventional boundaries and provoke reflection on interspecies relationships. Drawing inspiration from such practices,

the present study uses camel and cow skulls to explore broader questions about the human-animal connection, material agency, and the ethical dimensions of artistic production.

Overall, this theoretical framework positions the study at the intersection of cultural meaning, environmental responsibility, and philosophical inquiry, guiding the creative re-signification of skulls into contemporary sculptural forms.

2.2 Conceptual Framework

The conceptual frame of this study is again anchored upon Bruce Mahalski and his works. Bruce Mahalski is a New Zealand-born artist, sculptor, and museum curator known for his unique use of animal and human bones in art. Mahalski's practice involves transforming animal remains, and notably human skulls, into complex sculptural works, challenging human-centered views of the world and emphasizing the continuity of life across species (Hilton, 2018; Madden-Smith & Hilton, 2018). As Hilton (2018) observes, "The sight of bones may remind us of death, but Dunedin-born artist Bruce Mahalski sees life instead." His works explore the relationship between humans and nature, often blurring the boundary between life and death. Mahalski is also the founder and director of the Dunedin Museum of Natural Mystery, which houses his extensive collection of bones, skulls, and ethnographic artifacts. Through his "bone art," he promotes ecological awareness and challenges cultural taboos surrounding mortality. His practice bridges art, science, and activism, reflecting deep respect for the natural world (Mahalski, 2023; Wikipedia, 2024).

Figure 5

Sacred (2014).



Bruce Mahalski, Sacred, 2014

Source: Retrieved from <https://www.vice.com/en/article/3k4wqv/this-art-made-from-skull...> May 4, 2023

Building upon Mahalski's approach (as in figure 5) exploring human skull, this research explores the artistic potential of camel and cow skulls. These materials are investigated as vehicles for sculptural expression, allowing for both low relief, high relief and sculpture in the round and mixed-media artworks that engage with themes of identity, mortality, and the human-animal continuum. By situating these explorations within the principles of up-cycling, the study emphasizes ecological responsibility, material innovation, and the cultural and spiritual resonance of bones as artistic media.

2.3 Contemporary Sculpture and Medium

Sculpture can be defined or seen as a three-dimensional means of expression of an expert's use of materials like bone, clay, found objects, stone, metal, wood, et cetera to

produce or design figures in three-dimensions, (height, breadth and depth), which all depends on the creativity of the artist. Hannelore (2013), supports the view by noting that sculpture is the art of forming representations of objects in the round or in relief. Adeyemo and Duniya (2016), defines sculpture as an artistic form, where hard or plastic materials are worked into three-dimensional art objects, and could be in the round (free standing), in relief on surfaces, or in surroundings ranging from tableaux to contexts that envelope the spectator.

Nwanoro (2016), expresses sculpture as one of the oldest art forms. Visual arts has different branches but sculpture is the branch that presents art works in three dimensions and has long existed as landmark, monument, architectural embellishment, cultural symbol, and independent aesthetic object. These various age long representation of sculpture serves as the bedrock for the more recent modifications of sculpture which has not only protected the environment but has developed tourism as well. In times past, one could categorically say artists have a finite number of materials to work with but not anymore. Of late, the imagination and creativity of the artist determines the medium of expression.

Akintonde and Kalilu (2013) stated that, beyond providing aesthetic appeal, artworks also serve functions such as telling stories and preserving historical narratives. To this end, artists work with a generally accepted formula so that their works will serve the purpose it was meant to serve. This formula entails the form, style, the technique and the theme of the artwork all of which is denoted as the medium of expression as these are the elements that create the aesthetic appeal. It is in this view that the study decided to explore animal skulls as medium of expression in sculpture using Camel and Cow skulls

(CCS). This lead to the making of a silent comparison of the Camel and Cow skulls and artworks.

The Zarastro Art (2024) states that the word “contemporary sculpture” came up in the mid-1960s and 1970s to differentiate it from other sculpture epochs especially the modern sculpture. As the contemporary sculpture does not signifies any particular artistic style. Contemporary sculpture fosters an opening of the specific field of art to the point of concealing the limitations between disciplines through experimentation. Contemporary sculptures according to Tate Modern (n.d) often transcend traditional boundaries by incorporating a diverse array of materials and techniques. Artists today utilize a wide range of materials, from traditional ones like marble and bronze to more unconventional choices such as food, flowers, soap, and even industrial materials. Techniques employed include bending, folding, stitching, welding, bolting, tying, weaving, and balancing, allowing for innovative and expressive forms that challenge conventional notions of sculpture. The uniqueness of the art based on the peculiarities of the materials deployed in its expressions has clearly created a veritable space for its lasting impression and impact on the collective consciousness of the society.

Ogene in Egiolamhen, (2019) posited that, material research latently challenges the artist to explore the essence of new media in creating works that excel in form, sensibility and vision. In contemporary times, medium in Sculpture varies and dwell more on the creativity and explorative nature of the sculptor/artist in general. According to Adeyemo and Duniya (2016), define contemporary sculpture as an artistic form in which hard or plastic materials are worked into three-dimensional art objects, and could be in the round (free standing), in relief on surfaces, or in environments ranging from

tableaus to contexts that envelope the spectator. They push further to isolate and explain contemporary medium in sculpture sighting examples as “including clay, stone, metal, glass, wood, and randomly found objects.”

Generally, the skull carries diverse meanings across different cultural groups. In many Nigerian contexts and from observable social practices, skulls are often associated with death, bereavement, bad omen, evil spirits, ancestral veneration, and ritual activities. Such interpretations are deeply rooted in cultural belief systems and symbolic frameworks that regulate attitudes toward material objects (Mary Douglas, 1966; John S. Mbiti, 1969). However, contemporary sculptural practice has provided alternative perspectives by repositioning the skull as an abundant material resource capable of generating new aesthetic and conceptual expressions (El Anatsui, 2010; Alfred Gell, 1998). In support of this, Ononeme (2010) states that, there are ample of expressive materials been scattered in our environment looking for the attention of artists to create something out of them or as an object of influence in creative expression. He further states that some of these potential artistic media were divinely endowed through the wisdom of God in their natural environment while others have been used by man for various purposes and later abandoned thereby constituting nuisance in their respective locations. It was in this same state that the bones were recovered from, in order to up cycle them into functional sculptural pieces.

Relief Sculpture

Relief sculpture can be understood as a form of artistic expression in which figures project from, yet remain attached to, a solid background surface. It occupies a unique

position between two-dimensional and three-dimensional art forms. Art historians note that ancient Assyrian artists produced relief sculptures in which carved figures remained integrated with solid backgrounds, demonstrating a sustained interaction between material and form (Honour & Fleming, 2009; H. W. Janson & Anthony F. Janson, 2004). Furthermore, relief sculpture has been described as a composite artistic form that merges the spatial qualities of sculpture with the pictorial characteristics of two-dimensional art (Read, 1956; Curtis, 1999).

2.4 Meaning and History of Mixed Media

The meaning of mixed-media in a light term could be suggested to be an art expression in which two or more medium are used in a particular work of art. In global art discourse, mixed-media refers to a work of art, particularly in sculpture, composed of multiple materials to create a single piece, including bone, cement, found objects, wood, plastic, metal, rope, and others (Faida & Muhammad, 2021). Brad (2016:23) states that a type of artwork in which multiple media are used is known as mixed-media art. Thaneeya (2008) asserts that mixed-media art is a visual art form that combines different media within a single artwork and is closely related to other art forms, such as assemblage and collage. Assemblage is known as a 3dimensional sculptural form in that found objects are assembled together in an exclusive form while collage is the rearrangement of pre-existing elements, such as cut up paper of all sorts (newspaper clippings, vintage ephemera, gift wrap, postcard, old book pages, stamps, amongst others). Stephanie (2019) states that mixed-media techniques involve the combination of different methods and mediums to create an artwork. He further explains that a medium is an ingredient or

material such as oil paints, watercolors, pastels, or colored pencils used to produce art. He concludes that in mixed-media works, two or more art mediums are combined within a single image or sculpture.

It is worthy to note that there is difference between mixed-media art and multimedia art. Mixed-media means a work of visual art that mixes numerous traditionally unique visual art media. An example of this is a bone sculpture that is produced with iron, metal, wood; etcetera, can suitably be called a mixed-media, while multimedia art shows a wider range than mixed media, which merging visual art with non-visual materials such as recording sound, music drama, literature, dance, motion graphics, or interactivity. In this study, the researcher used mixed media for his form of expression so as to avoid a lonely and burring composition where necessary.

In using mixed media as a form of expression, so many artists have demonstrated their skills of creativity in the use of mixed media and how limitless the use of mixed media can be for sculptors.

What is known as mixed-media art started during the early twentieth century, when some artists were looking for an alternative materials, substitute for what they described as prejudiced academicism, artist started embracing things that were not regarded as art materials in their works (Hyatt, 1971:6). According to Tate (2010), the use of mixed-media began around 1912 with artists such as Pablo Picasso and Georges Braque, particularly in their geometric works. If the use of mix media is suggested to have begun around 1912 and Stephanie (2019) opines that, “The early 20th century was pivotal in the development of up-cycled art.” He further explains that around 1912, artist Pablo Picasso (1881–1973) developed a process called collage, in which he pasted

together bits of paper, photographs, newsprint, and small objects to form new images. Picasso also created sculptures from bits of wood and other scavenged materials. Still on Stephanie's view, "A few years later, artist Marcel Duchamp (1887–1968) used found objects to create art." He explains that found objects are items originally made for other purposes that are repurposed in art. These found objects often help address issues of waste.

Clemence (2018) posits that the French artist Marcel Duchamp was the first to use the "ready-made" concept. *Fountain*, created in 1917, is made from an upside-down porcelain urinal and is recognized as one of the most controversial artworks of the 20th century. Stephanie (2019) testifies that Marcel Duchamp used bicycle tires, wooden furniture, and even a ceramic urinal in his sculptures, with the urinal recognized as the most notable of his works. From the similar and contrasting views discussed above, it can be concluded that both mixed-media techniques and the use of waste materials in art emerged concurrently in the early 20th century.

2.5 The Use and Effect of Physical Changes in Up-cycled Materials in Art

Before the rise of waste materials in twentieth-century sculpture, collage remained the primary approach to up-cycled materials, largely confined to painting. While in sculpture, Amason (1978) states that Marcel Duchamp exhibited a urinal as a sculpture. His point was to have people look at the urinal as if it were a work of art, because he said it was a work of art. Duchamp moved from a relatively traditional form of painting, through various phases of cubism, to dada expression. Amason (1978) further states that among American and European artists in the late 1960s and 1970s, there was a

substantial revival and expression of “concept art” (conceptual art), which developed not only from Duchamp’s Dadaist ideas but also incorporated elements of linguistics and structuralism as interpreted by individual artists. Since then the trend of using waste materials for sculpture, has lasted for over two decades now, and still ongoing around the world including Nigeria. In Nigeria the use of up-cycled waste materials has become a popular artistic expression amongst painters, sculptors, which include but not limited to Taiwo Owoyemi, Dotun Popoola, El Anatsui and Jacob Jari.

This study is an attempt to up-cycle camel and cow skull bones retrieved from abattoir to produce sculptural pieces. According to Wengner (2016), up-cycling is based on sustainable consumption, with the main idea being to revitalize old materials by placing them into new constellations and suggesting new ways of using them, while keeping their essence intact as a primary value-adding feature of the process.

Scientifically up-cycling in art suggest physical change to the material being up-cycled. The disused material can still be recognized through critical observation in the physical change while chemical change might not suggest the material being recycled that could bring about an irreversible change. The study is based on physical change. According to LibreTexts (2019), “the difference between a physical reaction and a chemical reaction is composition. In a chemical reaction, there is a change in the composition of the substance in question; in a physical change, there is a difference in appearance, smell, or sample of matter without a change in composition.” It is further explained that in physical “reactions,” no reaction is actually occurring. For a reaction to take place, there must be a change in the elemental composition of the substances in question. LibreTexts (2019) concludes that physical changes are limited to changes that

result in a difference in display without changing the composition. Some changes may be reflected in texture, color, temperature, shape, and so forth. For a chemical change, it occurs when the substance's composition is changed. When bonds are broken and new ones are formed a chemical change occurs. While chemical changes are often reflected in change in temperature, change in Colour, noticeable odour (after which a reaction has begun), formation of a precipitate, formation of bubbles etcetera

According to LibreTexts (2019), when two or more reactants are mixed and changes in temperature, color, or other properties are observed, a chemical reaction is likely occurring. These are not definite indicators; a chemical reaction not be occurring. A change in colour is not always a chemical change. If one were to change the colour of a substance in non-chemical reaction scenario, such as painting a car, the change is physical and not chemical. This is because the composition of the car has not change”.

According to Savannah (2017), a physical change is any change in a substance's form that does not alter its fundamental composition. Examples of physical changes are breaking a stick or melting ice”. He also says that, “chemical change, or chemical reaction, occurs when atoms of a substance are rearranged, and the bonds between the atoms are broken or formed, during a chemical reaction, the structure or composition of the material changes.” He also concluded that, when a chemical change is completed, the resulting substance(s) is/are different from the original substance(s). As a result of a chemical reaction, new substances with new properties are formed.

2.6 Reason for Adopting Physical Change for Studio Exploration

In sculpture, physical change and chemical change is the transformations that occur in materials during creative process. While chemical change involves alteration to

the molecular structure of materials, resulting in new substances with different properties, physical change involve alteration to the material's shape, size or state without changing its chemical composition; for example, using skull or bones in sculpture to create different forms and figures. Chemical changes drastically will result into a new material that is totally different from the initial material. Primarily, some basic component will have been added or removed. Right from mere observation outright difference in medium will have been perceive in terms of change in colour, state of matter, texture etcetera. This study chose to retain the natural characteristics of the skull (physical change) in terms of colour, surface texture, size, and to a large extent the forms and structure of the bones (skull). This led to the collection, sorting, cleaning of the skulls and its components, treating, carving, cutting, drilling, engraving and installation of the skull. Which will not alter the chemical composition of the skulls and skull parts been made used off, as sited earlier by Savannah (2017).

It is important to note that the ability to manipulate the natural forms and structures of skull is a form of creativity on its own. The researcher does not t intend to use chemical change on the skull but rather, to make art production by retaining the natural composition, characteristic, texture, colour even the basic forms and structure in certain art productions.

2.7 Reuse, Recycling, and Up-cycling in Sculpture

2.7.1 Reuse in Sculpture

Reuse refers to the direct incorporation of discarded or pre-used materials into new sculptural works with little or no alteration. This approach extends the lifespan of

materials while allowing them to retain their prior identities and histories. Gregson et al. (2010) emphasize that reuse is not merely functional but also symbolic, as it preserves the material's narrative traces while embedding it in new creative contexts. In sculpture, reuse underscores continuity, where objects once valued for utility are re-signified as carriers of cultural meaning. For example, artists often adopt industrial parts, wood fragments, or bone elements in their natural state, highlighting both their former functions and their new expressive possibilities.

2.7.2 Recycling in Sculpture

Recycling differs from reuse in that it involves breaking down discarded materials into their raw forms before reconstructing them into new products. While this process promotes environmental responsibility, it simultaneously leads to the erasure of the material's original identity (Alexander & Reno, 2012). In the context of sculpture, recycling is less about symbolic retention and more about transformation. The material's prior narrative may be lost, but new forms and textures emerge that invite fresh interpretations. For instance, metal scraps melted into ingots and recast as sculptural elements illustrate how recycling privileges physical renewal over cultural continuity. This approach resonates with global discourses on sustainable art but has limitations in retaining the symbolic value inherent in the original object.

2.7.3 Up-cycling in Sculpture

Up-cycling represents a more nuanced creative strategy that enhances the value of discarded materials without degrading their integrity. McDonough and Braungart (2002)

argue that up-cycling “maintains the material’s integrity and value while elevating its purpose and appeal in new contexts.” Unlike recycling, which reduces materials to their base matter, up-cycling foregrounds the histories embedded within materials, leveraging these narratives as integral components of the artwork’s conceptual strength. Similarly, Sung, Cooper, and Kettley (2014) emphasize that up-cycling not only promotes environmental sustainability but also stimulates significant innovation within design practice.

In sculptural practice, up-cycling functions as a deliberate strategy of re-signification. Artists such as El Anatsui transform discarded bottle caps into monumental, textile-like installations that critique consumerism and colonial histories; Vik Muniz assembles landfill debris into portraits that expose socio-economic inequalities; and Tony Cragg manipulates plastic waste into vibrant abstract forms. Nnorom (2021) characterizes such practices as acts of “creative resourcefulness,” underscoring that up-cycling operates simultaneously as an ecological strategy and an aesthetic intervention. Spaid (2017) further observes that these materials embody ecological narratives, positioning the artwork at the intersection of sustainability, memory, and artistic innovation.

2.7.4 The Benefits of Up-cycling Materials in Art

The benefits of up cycling in sculpture cannot be overemphasized as it serves as source for art creation, reduce pollution, conserve resources, saves energy amongst others, aside from minimizing the volume of discarded materials and waste being sent to landfill each year, it also reduces the need for production using new or raw materials which means a reduction in air pollution, water pollution, greenhouse gas emissions and

often a conservation of global resources. According to Hayes (2014), up-cycling plays a significant role in environmental conservation and intergenerational sustainability. He identifies several key benefits of up-cycling, including:

- the reduction of waste sent to landfills and incinerators;
- the conservation of natural resources such as timber, water, and minerals;
- the prevention of pollution by minimizing the need to extract new raw materials;
- energy savings through reduced production demands;
- the reduction of greenhouse gas emissions that contribute to global climate change; and
- the overall protection of the environment for future generations.

Obviously, the benefits of up-cycling cannot be overemphasized as it should be a must to any nation that intends to develop. The benefits of up-cycling to the nation are the benefit of up-cycling in arts to the nation as well. Never the less, there are certain things that could be particular to up-cycling in art.

This development is expected to grow and continue because of the increased availability of waste generation. Because of the above stated facts, it has become imperative for people of all sectors to tackle wastes of all kinds and its causes, and to this, the artists (Sculptors) are not left behind. The rapid growths of the world economy and developments have placed a huge demand on the use of natural resources. To save the earth from excessive exploration of her resources, up cycling reuse and recycling of waste materials are extremely important; although up cycling of waste materials is not a new phenomenon to man and the up cycling of bones is also an old practice. Peter (2015)

states that the word wastes suggest ‘rubbish’ which is misleading; as wastes, especially bones are of great value today.

The researcher’s purview here is to create something out of the abundant materials available in environment, which may have been regarded as ‘waste’ or ‘discarded’. The grasp of this research is based on Plato’s assertion on the essence of art primarily being an imitative engagement, and corroborating the obvious statement made by Lerma, Degiozgi, and Adione (2006) assert that “the ability of the artist in identifying waste materials in the natural environment and the process of redefining them into works of art” constitutes the cerebral drive of this study (p. 11).

2.7.5 Bone

Generally, the term *bone* often evokes the image of the whitish structural element embedded within flesh, providing support for muscles and defining the form of animal bodies. From a biological perspective, Rinaldo, Gisela, Estela, Manuel, and Paulo (2015) describe bone as a mineralized connective tissue composed of four distinct cell types: osteoblasts, bone lining cells, osteocytes, and osteoclasts. Tim (2018) further emphasizes that bones are far more than mere scaffolding; they exist in various shapes and sizes and perform multiple physiological functions, making them a compelling source of artistic inspiration in this study. This research specifically draws on the structural and aesthetic qualities of camel and cow skulls, manipulating their original forms to generate expressive sculptural compositions. Supporting this focus, Jigsaw Cambridgeshire (n.d.) observes that animal bone represents one of the most commonly recovered materials from

archaeological sites. Accordingly, the skulls of camels and cows identified as bone materials form the primary medium for exploration in this study.

2.8 Bone Artists and their Artworks

This segment of the review of related literature examines some bone artist, bone artworks and skull bone artworks. Artworks that are related to the study and at the same time will have an influence on the researcher while embarking on the research. The artists are, Hideki Tokushige and Bruce Mahalski but this is not to say they are the only bone artist available. Bruce in particular was review because some of his bone artworks reveal animal skulls such as cat, bird, human etcetera

2.8.1 Hideki Tokushige

Hideki Tokushige is an artist. His works have been featured in several exhibitions at key galleries and museums, including the Gallery Kogure, Tokyo and the Gallery Kogure, New York Mutual Art, (n.d). According to the Artling (n.d), Hideki Tokushige was born in Kagoshima, Japan in 1974. In 1997, he graduated from the Nippon Photography Institute in Tokyo, from the Department of Documentary Photography. It was also stated that, in 2008, he started his signature practice of Honebana (Bone Flower) after finding a raccoon dead on the road. He has lived in Tokyo since 2013. In 2011, he was awarded the Young Artists of Japan Vol.4 Grand Prix. He has had two solo exhibitions, in 2013 and 2015 respectively, held at Lower Akihabara in Tokyo. The Artling (n.d.) also confirmed too that, he has participated in various group exhibitions in Taipei, Paris, Brussels, New York and throughout Japan.

Figure 6

Honebana Making of Madonna Lily” Hideki Tokushige.



Artist Works, (2018). (YouTube Screen shot) “Honebana_Making of Madonna Lily” Hideki Tokushige.

Source: Retrieved from https://youtu.be/mPWVF_6iEcc August 31, 2019

Sarah (2013) defines art as something that can be made out of almost anything in reference to Hideki Tokushige (Figure 16). He embraces the concept literally by constructing beautiful pieces out of animal bone. He explained further that, Tokushige's art is only made out of the bone from discarded animals; he doesn't kill anything in order to receive more material. Jaymi (2013) notified that, Sculptor Hideki Tokushige purchases rats and mice from pet shops in frozen batches that are normally used to feed reptiles. He will then defrosts the small creatures and cuts away the flesh until he has collected hundreds of miniscule bones. While Sarah (2013) specifies that, once Tokushige has the bones, he creates stunning and intricate flowers. After he takes pictures of, or displays his amazing work, he then breaks the bones back down and puts them out to be composted.

Figure 7

Making of Madonna Lily



Artist Works, (2018). (YouTube Screen shot) “Honebana_Making of Madonna Lily” Hideki Tokushige

Source: Retrieved from https://youtu.be/mPWVF_6iEcc August 31, 2019

From the above view (Figure 17) which suggests the artist at work while making Madona Lily, observing the tinning bones that he is working with, which demands for the use of his forceps in other to pick and put the tinny bones together. Also in figure: 36 below critical look of the graphically ruled green table or mat, where the tiny bones are carefully arranged, before it will be picked up by the artist to create an intension. Jaymi (2013) the beautiful yet gruesome flowers are then made by gluing each tiny fragment together until they resemble a recognizable bloom. It suggests that there is no guess work in his length and sizes of the bones of such that suggest great dexterity and struggle towards perfection. This graphical measures (Figure 18a-b below) have been taken

probably in order to get the grains of the leaf of the flowers well arranged in the descending and ascending order.

Figure 8

Making of Madonna Lily



Artist Works, (2018). (YouTube Screen shot) “Honebana_Making of Madonna Lily” Hideki Tokushige.

Source: Retrieved from https://youtu.be/mPWVF_6iEcc August 31, 2019

Figure 9

Making of Madonna Lily



Artist Works, (2018). (YouTube Screen shot) “Honebana_Making of Madonna Lily” Hideki Tokushige.

Source: Retrieved from https://youtu.be/mPWVF_6iEcc August 31, 2019

Observing the full made Madona Lily in comparison to Sarah (2013) statement which states that, “Once Tokushige has the bones; he creates stunning and intricate flowers. After he takes pictures of, or displays his amazing work, he then breaks the bones back down and puts them out to be composted”. This was also acknowledge by Jaymi (2013), he displays the delicate bone structures at exhibitions for a limited period of time before breaking them up and burying them in the ground. One could find a reason why Hideki Tokushige always snaps his work and returns the bone outside to be composted. Actually the flora artworks looks fragile which could not guarantee the permanence character attributed to sculptural artworks, but through the pictorial documentation and multiplication longevity of the artworks could be attempted. Jaymi (2013) acknowledges that, these stunning flowers might look like they have been created using lace or delicately cut from paper but they are actually made from the skeletons of dead animals. Jaymi also informed that a flower is made from around 100 mice bones and sometimes it takes more than a month to dissect one rodent and also added that, he has made 11 kinds of flower like lotus, spider lily, dandelion, and hydrangea.

Figure 10*Chinese Lantern Plant*

Chinese Lantern Plant (2015). Dimensions: 33.6cm (H) x 26.8cm (W) / 13.2"(H) x 10.6"(W).

Source: Retrieved from

https://ik.imagekit.io/theartling/p/artworks/image_iUyhF6i.jpg?tr=c-at_max,w-2000,h-2000 August 2, 2019

The floral Chinese lantern plant bone art work (Figure 19 above) is characterized with three different kinds of texture. The leaf surface texture, which suggest the fur of a cat; the texture of the stem that looks like a vertebra column (backbone); the two seeds of the plant, that actually hang like a lantern is also observed to be having another surface texture defined by different forms of tiny lines as in the case of Madonna Lily and the black background that gives an impression of night time. Probably due to the surface

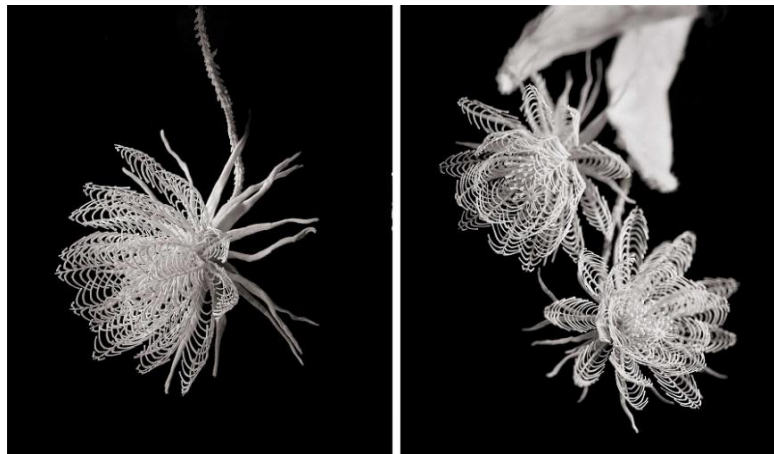
finishing or pictorial effects, the art piece looks more of plastic than bone but in contrary, Jaymi (2013) states, “I often bring up the image of a flower from the bone's shape (Figures 20–24 below). I never whittle or manufacture bones; I simply use the natural characteristics of the bone”. He further stated that, he only use real bones, fur skin, and glue, because all the stuff will be returned to the earth. Bone flowers are pulled apart and put in the ground after shooting. It was also informed that he makes flowers by changing various combinations of bones. Camellia in (Figure 20 and 21 directly below) suggested that the artist makes use of rat bone ribs and skin for the leaves

Figure 11

Camellia.

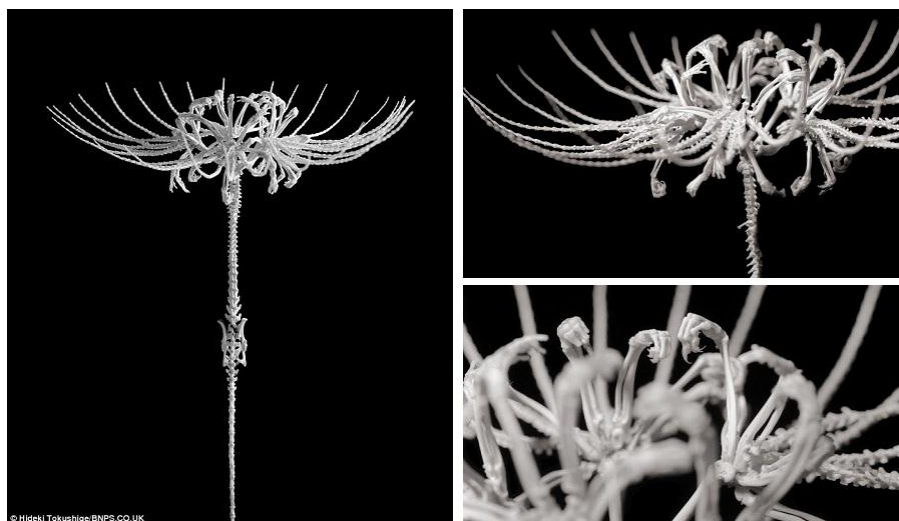


Source: <http://4.bp.blogspot.com/-qZb1uZuXngI/UdEhjFZlqml/AAAAAA...>, 2019

Figure 12*Queen of the Night.*

Source: <http://3.bp.blogspot.com/-KuOue61...> 2019

While (Figure 21 and 22) imply that the artist Hideki Tokushige make use of rat ribs bones, and skin to create the leaves. In (Figure 22 below) it is critically observed that he used the spinal cord bones for up sided turned umbrella and the pole of the umbrella, while the human figures were illustrated with femur and phalanges from the same rat.

Figure 13*The Kabal of Bone Flower (2015)*

Source: <http://3.bp.blogspot.com/-eZMf->, 2019

Figure 14

Hydrangea.

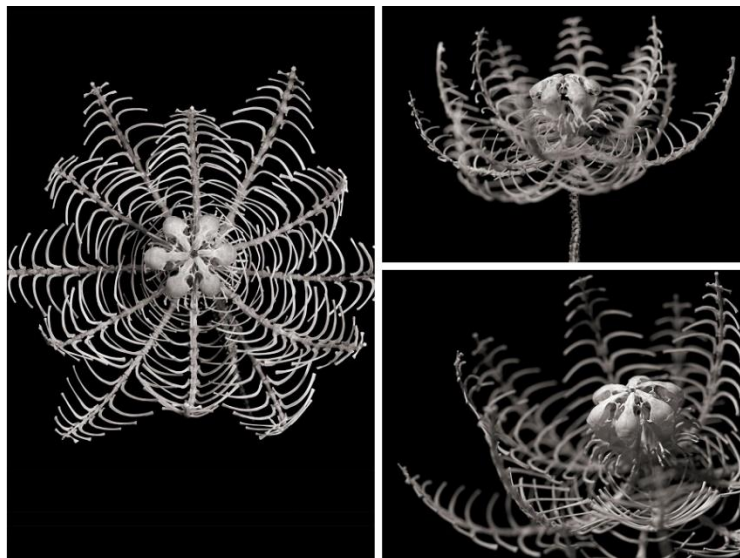


Source: <http://1.bp.blogspot.com/zKm9pYq1Wgc/UdEhk...>, 2019

Hydrangea (Figure 23) shows shoulder blade bone of rat and the skin. The Lotus (Figure 24) is rat rib bones and probably trimmed shoulder blade bones at the central.

Figure 15

Lotus.



Source: <http://2.bp.blogspot.com/-USC2-arHxk8/UdEm5LmeehI/AAAA...>, 2019

2.8.2 Emma Witter

Emma Witter (Figure 25 below) is a contemporary sculptor who derives creative inspiration from found and discarded organic materials, transforming them into intricate botanical sculptures that metaphorically “breathe new life into lost things.” Born in 1989, she lives and works in London, where her artistic practice predominantly involves the use of chicken bones and oyster shells, among other organic remnants. Her work exemplifies a sustainable and imaginative approach to materiality, recontextualizing discarded biomass into delicate sculptural forms. As Katty (2019) observes, “For most of us who eat meat, we tend to discard the leftovers once we’ve finished. For artist Emma Witter, she loves to breathe new life into bones to create intricate sculptures.” Similar to Madden and Hilton (2018), Bruce Mahalski states, “The sight of bone may remind us of death, but I see life instead.” In conclusion the sight of bones might imply death, accident or horror but after exploration in art it might imply life, beauty and immortality. An explored bone in arts denies it from natural or artificial decomposition that is death. Furthermore, “she often juxtaposed with flowers or fruit in its various stages of decay. Witter plays with this idea in her bone vase works where she uses pig shin bones as empty vessels which hold dying flowers, referencing Flemish painters who used the flower as a symbol for the fragility of life”

Figure 16*Emma Witter*

Source: <https://dcxvepib5r3t6.cloudfront.net/attachments-2...>, 2019

Also observed to be similar in terms of exploration is the fact that, both artists produce floral sculptures. Katty (2019) testifies, “The series focuses on the flower motif, from which Witter forms beautifully intricate studies constructed from tiny chicken feet bones.” Which also acknowledge that she mostly uses bones collected from chickens while, it was established that Bruce Mahalski mostly explores bones retrieved from frozen rats. Perhaps what sound like a difference during critical observation of their floral sculptures could be the fact that Emma Witter produce flower and flower vase from bones of other animals. For instance the vase bellow can be described as a hip bone of a vertebrae animal.

Figure 17

A Bone Flower Vase



Source: <https://www.creativeboom.com/uploads/artic...>, 2020

Figure 18

Bone, Brass wire



From Ting-Ying Gallery, Emma Witter, Gloria (2019),
Bone, Brass wire, 56 × 40 × 40 cm.

Source: <https://d7hftxddivxxvm.cloudfront.net/?height...> on June 7, 2023

Figure 19

Flower made from Bones



Source: https://artlogicsres.cloudinary.com/w_1600,h_1600..., 2024

According to Mater (2022), Emma Witter's work is grounded in repurposing waste from the food industry. She began by preserving bones from her own meals and shared gatherings, intrigued by their delicate, almost floral forms using examples like oxtail and turkey vertebrae. Over time, she expanded her sourcing through friends, family, and ultimately butchers and chefs, thereby confronting the sheer volume of bone by products in the food industry. Nancy (n.d.) explains the meticulous production process that Emma Witter adopts in her sculptural explorations with bones, noting, "I usually work across a number of sculptures at the same time, as the process of prepping the bones (collecting, boiling, bleaching, drying, and organizing) has many pauses in between."

Emma Witter is a London based artist. In 2008, she earned her diploma in Art and Design from The London College of Fashion. In 2012, she received a first-class honours degree in Performance Design and Practice from Central Saint Martins

2.8.3 Artists' Use of Animal Skulls in Contemporary Sculptural Practice

There are several artists around the world that either incorporate animal bones, animal skulls, in some cases, human bones into their art creation or use animal skull itself as their sole means of art creation. These artists used animal skulls as a medium to explore various ideas. Some of these artists include Damien Hirst, Robert Kuhn, Kate MacDowell, Peter Gronquist and Bruce Mahalski amongst others. For the purpose of this study, the researcher will examine Bruce Mahalski and Henry Moore as bone artists whose works are related to the study and at the same time having an influence on the researcher while embarking on the research. Bruce Mahalski is observed to be using different animal skull in his bone artworks composition human skull inclusive.

2.8.3.1 Bruce Mahalski and his Animal Skull Artworks

Bruce Mahalski is a New Zealand artist who has had solo and group exhibitions of his art work in a range of media including screen-printing, photography, painting and sculpture since 1996 (mahalski.org, n.d.). It was also stated that, in 2005 he made the first bone gun for an anti-war exhibition called "Full Spectrum Dominance" and by 2010 he had begun to specialize in his trademark textural bone sculptures. It was also informed that, apart from being a practicing artist, Mahalski, is also the director of The Dunedin Museum of Natural Mystery in Dunedin which contains his collections of

skulls, ethnological art and interesting historical ephemera. He also has a gallery where people can buy his trademark sculptures as well as paintings, prints, masks and books which are also produced by the artist. Radio New Zealand (2018), confirmed that, he was a teacher at Williams School of Art ('Inverlochy Art School') in Wellington between 2004 and 2017. It was also confirmed that, in 2017 also Mahalski moved back to his hometown of Dunedin and opened a Museum of Skulls and ethnological art, and a gallery where he displays his latest bone sculptures.

Figure 20

Macabre Machine Gun Art: Bone Artwork



Source: <https://www.trendhunter.com/trends/bone-artwork>. August 30, 2019

Date: 2013

Kyle (2013), remarks that, this bizarre form of bone artwork might not be for the faint of heart. Using animal bones as his medium, Bruce Mahalski has crafted an actual

sized replica of an AK-47. It's not real, though; the only thing it shoots is cold, icy chills down one's spine. He confessed that, "I never read how Bruce finds the ample amount of bones used for his bone artwork, but most of me do not want to know. As others may feel the same, it grosses me out that he is actually holding it in his hands".

Figure 21

AK 47-kalashnikov with stand



AK 47-kalashnikov with stand 1 (medium):mahalski.org | Mahalski Bone Art
Source: <http://www.mahalski.org/wp-content/uploads/2011...>, August 30, 2019.

From the critical observation around the artwork from different view point, it could almost be suggested that, the Macabre Machine Gun is made up of over 500 pieces of bone not to exaggerate. Which also includes animal skull as observed during critical observation

Figure 22

Close view of Macabre Machine Gun Art: Bone Artwork



Macabre Machine Gun Art: Bone Artwork, (2013).

Source: <https://www.trendhunter.com/trends/bone-artwork> August 30, 2019

The artwork (Figure 31) is viewed to have been made up of different pieces of bone of a skeletal system, even though it is difficult to suggest the animals in particular. It could still be perceived that he made use of skulls and its parts such as cranium, teeth, lower jaws and upper jaws of animals. Most of which that cannot be identified from the observation of this picture. It could as well be suggested that Mahalski likes producing sophisticated weapon (gun) from bone. While observing is gallery varieties of such sophisticated weapon were observed (Figure 32 and 33 below). Such that it even reflect the use of bird skull (Figure 32 below) in designing a barrel of pistol. It was also observed he used the teeth, which is part of a skull to build the bullet chamber.

Figure 23

Bone-Show-Bone-Gun

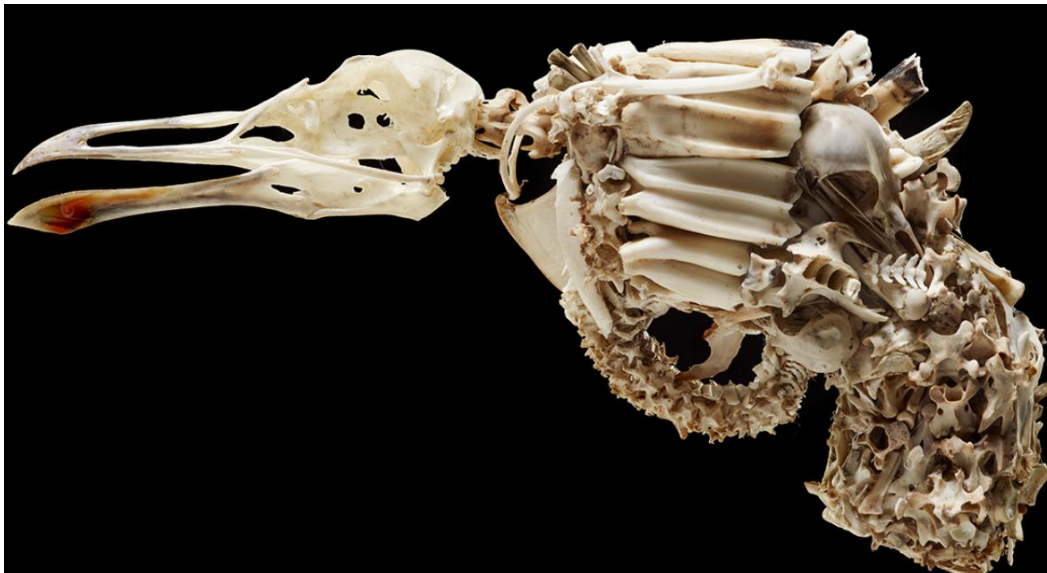


Bone-Show-Bone-Gun (n.d): Mahalski.org | Mahalski Bone Art.

Source: <http://www.mahalski.org/wp-content/uploads/2011/09/Bone...>, 2019

Figure 24

Bird Tooth Colt Pistol



Bird Tooth Colt Pistol (2012) Mahalski.org | Mahalski Bone Art.

Source: <http://www.mahalski.org/wp-content/uploads/2011/09/Bird->, 2019

The above bone pistol (Figure 33) is suggested by different parts of the skeletal system as well as different animals even though not detail but it is representational. For instance the barrel of the gun is represented with a bird skull that has a long beak, the lower part of the skull suggest the ejector rod of the pistol, the pick of the beak is the muzzle, the teeth probably of a mammal animal suggest the cylinder where the bullets are arranged inside the pistol. All above just described are all components of a call. It should also be noted that the following parts of a pistol were suggested as well using other parts of the bone. They are trigger, trigger guard, hammer, cylinder release; the cylinder release puts the bullet in a position for it to be fired and grip which is the handle of the pistol.

Figure 25

The Bone Guitar.



Mahalski.org | The Bone Guitar.

Source: <http://www.mahalski.org/archives/820#!pretty>, 2023

Figure 26



[Youtube]. The Bone Guitar by Mahalski/Goldbeard (2013) Expurgated version.

Source: https://youtu.be/Jrqma_1zzr, 2019.

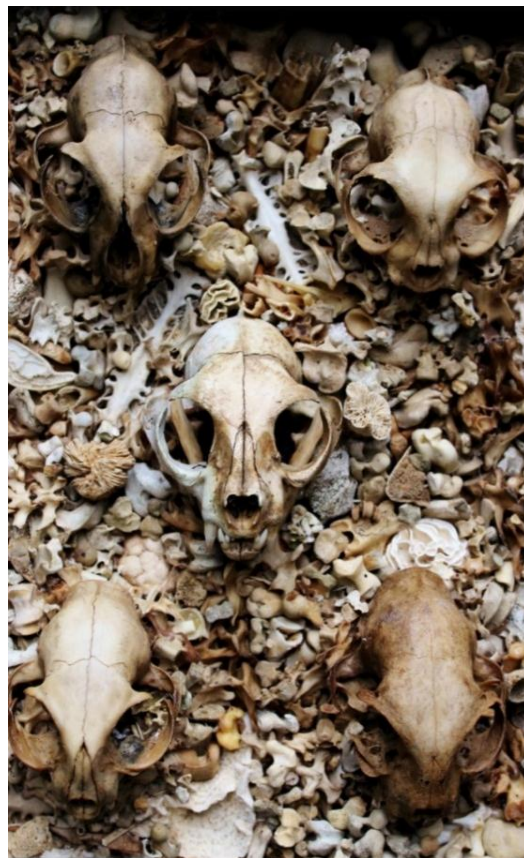
The bone guitar (Figure: 34a above) was not only perceived serving aesthetic purpose or as symbol of music, it was also witnessed been functional that is playing musical notes. A major interest that course inquisitiveness around his artworks is what has he used to put the bones together, or how did he put the bones together, knowing full well that the artworks are made up different pieces of bones and probably of different animals, thus creating a marbling effect.

According to Bruce Mahalski (2013) [YouTube], “The first bone guitar (Figure 34a and b above) is a collaboration between textural bone artist Bruce Mahalski and guitar maker David Gilberd of Goldbeard Guitars.” It was informed that, it is an acoustic slim body, steel string (6) dreadnought (1030mm long) which has been handmade by Goldbeard from spruce and mahogany. It could then be suggested that the guitar artwork is a mixed media art crafted with bones, wood and metal. Going into details of the bones

been used, it was suggested that, it has about 35 skulls on it including hedgehog, stoat, weasel, rabbit, rat, magpie, hawk, gull, possum, duck, sparrow, thrush, sting-ray and part of an extinct moa's jawbone. It was also stated that it consists of bones and teeth from cat, dog, sheep, wild pig, cow, wallaby, swan, seal and snapper. Worthy of note is the fact that, the guitar is a work of art and is not designed for everyday use. It does play but despite the bone frets it is effectively a fretless model which can only be played using a slide.

Figure 27

Five Cat Skull Box



Five Cat Skull Box (2015):mahalski.org | Mahalski Bone Art.

Source: <http://www.mahalski.org/wp-content/uploads/2011...,2019>

As the study centers on the exploration of animal skulls as medium of expression in sculpture, this particular artwork Five Cat Skull Box (Figure 35) can be suggested to be of great influence on the researcher in the course of the study. This is due to the fact that the skull of the cats were strategically and conspicuously engage on while other bones of different parts and animals serves as the background, perhaps it would be similar to one of the way the researcher will wants to engage on Camel and Cow skull.

2.9 Implication of the Review

In the course of the literature review various methods of treating bones were reviewed in order to make the process safe and healthy. They are the boiling and burying methods, but the boiling method was adopted in the study, because it retains the natural colour of the bones (skull) and very fast without denaturing bones (skull). Also in the course of the literature review it was practically observed that animal skull can be used and they have been used to produce sculptural artworks. It was clearly observed that Bruce Mahalski makes sculptural pieces out of animal skulls. It was particularly informed that he made use of human being skull among all other skulls to produce sculptures. Therefore the study reviewed some other animal skull including the camel and cow skull that was used for the study.

CHAPTER THREE

METHODOLOGY

This chapter presents the research methodology adopted for the study. It outlines the design of the Study, Population of the Study, Instrumentation, Research Procedures, Materials and Tools, Methods of Data Analysis, and Approach to Visual Analysis and Discussion. Each section is tailored to support the studio-based and practice-led nature of the research, ensuring a coherent framework for both creative and academic inquiry.

3.1 Design of the Study

The research design offers a framework that systematically directs the researcher through the stages of data collection, analysis, and interpretation. According to Creswell and Creswell (2018), a research design is a logical blueprint that bridges research questions with data and conclusions. This structure helps to ensure that evidence is gathered in a purposeful and coherent manner. Similarly, Yin (2014) argued that the design of a study enables the researcher to maintain focus, avoid bias, and link empirical data to theoretical assumptions.

To explore “Camel and Cow Skulls and their individual parts as an Alternative Medium of Expression in Sculpture,” this study employed a studio-based exploratory design. Studio exploration, as a research methodology, enables knowledge production through creative practice, a concept supported by Sullivan (2010), who emphasized “thinking through making” as central to art-based inquiry. In this context, the researcher engaged in cycles of creation, reflection, evaluation, and refinement, directly interacting with materials and tools.

Egonwa (2012) affirms that studio-based research is primarily concerned with art production in all its facets including media, techniques, tools, and conceptual intention. He also notes that collaboration with science and technology experts is sometimes required, especially when experimenting with unconventional media. This justifies the exploration of camel and cow skulls as alternative sculptural materials, considering their symbolic and physical attributes.

Elkins (2009) similarly argued that insights gained from studio environments are both material and theoretical. Borgdorff (2012) described such knowledge as “embodied and situated,” meaning it arises from the act of making and remains inseparable from its context. These ideas echo Egonwa’s (2005) earlier assertion that material choice and manipulation are deeply tied to artistic expression and cultural identity in African art practice.

The study adopted a mixed-media approach, exploring the potential of skulls not only as isolated objects but also as integral parts of layered, complex sculptural narratives. All transformations applied to the materials were physical in nature (cutting, drilling, sandpapering assembling, refining), in line with the principles of up-cycling, and avoided chemical alterations.

A total of four sculptural formats were explored to produce: sculptures in the round, high relief, low relief, and mixed-media installations. These forms allowed the researcher to experiment with both spatial and conceptual dimensions, showcasing the versatility of skull-based materials in contemporary sculpture.

For material collection, skulls, skulls fragments and bones were sourced from three major abattoirs in Nigeria. The abattoirs were selected based on proximity,

availability, and frequency of slaughter. Due to its rarity in most locations, camel skulls and parts were obtained exclusively from Kano Abattoir Limited, located in Dala Local Government Area of Kano State. According to Richard (2021), this abattoir is one of the oldest in the metropolis, with over 58 years of operation. Cow skulls, being more readily available across the country, were sourced from the same Kano Abattoir, as well as Ikpoba Okha Government Abattoir (Abattoir Road, Ikpoba Slope, Benin City, Edo State), and Odo Eran Abattoir, located behind Adeola Odutola College in Ijebu Ode, Ogun State.

Also accordingly, this study adopted reflective creative cycles, sketching, assemblage, sculptural modeling, and critical evaluation. Each stage involved deliberate decisions regarding form, stability, aesthetics, symbolism, and cultural resonance. Candy and Edmonds (2018) maintain that such iterative processes are central to generating new knowledge in visual arts research.

In essence, the study design integrated both artistic inquiry and intellectual investigation. It not only aimed to produce finished sculptural works but also to interrogate the symbolic, cultural, and material implications of using animal skulls in contemporary sculpture. As Leavy (2015) notes, when art-based research is conducted reflexively and methodically, it contributes valuable insights to both scholarly and creative fields.

3.2 Data Collection Instruments and Procedures

At this stage of the research, the primary aim was to identify skulls and individual skull parts that could be useful for visual expression through direct observation. According to Lere, Dadughun, and Bulus (2002), *“the observational method of data collection is a basic method of obtaining information about the world around us.”* They

further noted that *“it is the primary tool of scientific inquiry and its value is greatest when it serves the formulated research purpose.”* In this study, the observational method proved crucial in selecting skull forms and parts that aligned with the artist’s creative intent.

Awotunde, Ugodulunwa, and Ozoji (1997) define data as *“facts, observations, or information relating to a particular activity or study.”* They emphasized that data collection is a vital step in the research process. In line with this, the study utilized both primary and secondary sources, along with fieldwork, to gather relevant data.

Secondary data were obtained from journals, magazines, articles, books, photographs, and internet downloads, materials that provided contextual and conceptual support to the study. Three main research procedures literature review, pilot study, and fieldwork were employed as outlined below:

- **Internet Sources:** The researcher consulted scholarly publications including academic journals, periodicals, theses, dissertations, and other relevant online content. These sources provided theoretical frameworks, comparative insights, and technical data. All literature reviewed was critically analyzed, interpreted, and appropriately referenced. The use of internet-based sources enhanced the study’s foundation and offered a broader perspective for material exploration.
- **Field Work:** Field work in this study involved visiting abattoirs and their disposal sites to identify and collect camel and cow skulls as well as their individual parts suitable for artistic use. These hands on approach enabled the researcher to observe, assess, and select skull parts based on form, texture, and symbolic relevance. Informal interactions with butchers, livestock handlers, orthopedic doctors/nurses and vet

doctors provided additional insight into bone preservation and cultural interpretations. It was during the fieldwork that the bones were treated and interacted with as a sculptor to produce visual images. As Marshall and Rossman (2016) noted, field work allows researchers to engage directly with their subject matter in real-world contexts. It also facilitated experiential learning and enhanced the authenticity of the sculptural exploration (Creswell & Poth, 2018)

3.3 Research Instruments

The research instruments employed in this study included unstructured interviews and digital media tools, specifically a digital camera and video recorder. The unstructured interviews allowed for informal conversations with butchers, livestock handlers, orthopedic doctors/nurses and vet doctors that enabled the researcher to gather contextual and cultural information regarding bone (skull) usage and preservation. These insights complemented the practical studio exploration.

The digital camera served a critical role in documenting the processes involved in skull treatment and the step-by-step creation of the artworks in the studio. As Muhammad (2012) notes, visual representation serves not only as a documentation tool but also enhances the analytical and interpretive aspects of creative research. He further explains that photographs support visual analysis and aid in the discussion of works under investigation.

Digital photography was particularly advantageous for capturing multiple shots from various angles. Images that lacked clarity were immediately deleted and replaced, ensuring high-quality documentation throughout the research process. Ogene (2006)

supports this approach by asserting that digital art practice encompasses two and three dimensional image manipulation, photography, and digital documentation. He emphasizes that it involves the production, reproduction, recycling, and archival of visual data in contemporary studio practice.

3.4 Procedure adopted for Pre-Studio and Studio Production Process

This section outlines the procedures adopted for both the pre-studio and studio production phases of the study. It provides a detailed account of the materials used and the specific stages and steps followed in the creation of the sculptural artworks. The entire studio production process was structured into four key stages, following established practices of experimental studio research in contemporary sculpture and sustainable material studies.

3.5 Pre-Studio Production Process

Stage 1: Bone Selection

Step 1: Identification and sorting of skulls and skull parts suitable for artistic expression.

Step 2: Initial boiling of skulls and parts to remove excess flesh, ligaments, blood, oil, and marrow.

Stage 2: Treatment, Cleaning, and Drying of the Skulls

Step 1: Continued boiling of the bones, which facilitates other essential treatment steps.

Step 2: Degreasing of bones.

Step 3: De-fleshing of bones.

Step 4: Demarrowing to remove inner tissues.

Step 5: Surfactant-assisted deodorization to reduce odour.

Step 6: Proper washing using metal sponges and other improvised tools, followed by rinsing in clean water.

Step 7: Soaking in hydrogen peroxide to enhance whitening and sterilization.

Step 8: A second rinse in clean water.

Step 9: Soaking in ethanol solution to ensure fast drying and firm handling.

Step 10: Draining and air-drying of the bones.

Step 11: Storage of the cleaned and dried bones in a well-ventilated space.

3.6 Studio Production Process

Stage 3: Conceptualization of the Design

Step 1: Collation and synthesis of relevant data and preliminary development of design ideas.

Step 2: Critical analysis of data, followed by sketch production through draughtsmanship (the ideation process)

Step 3: Measurement and scaling of selected sketches for studio execution.

Step 4: Preparation of a suitable workspace for bone manipulation and experimentation.

Stage 4: Studio Exploration Proper

Step 1: Selection of appropriate skulls and parts from storage.

Step 2: Application of modeling techniques to achieve foundational forms.

Step 3: Engraving, cutting, drilling, boring, grinding, filing, carving, slicing, and Sandpapering of bones to refine form and detail.

Step 4: Assembly of the components using Araldite adhesive, screws, bolts, nuts, metal joinery, and welding techniques for structural cohesion.

Note:

These procedures were not strictly linear; rather, they followed a flexible, responsive methodology adapted to the condition of each skull or skull part at the state of identification and selection. This dynamic approach allowed the researcher to determine the most appropriate next step based on visual, tactile, and structural assessments of the materials.

To ensure thorough documentation, photographs and short video clips were taken at each major stage using digital tools (see Research Instruments section). This visual record not only supports transparency in practice-based research but also aids subsequent analysis and discussion.

The five (5) research questions were explored and addressed through these practical processes, culminating in a visual analysis that aligned with the objectives of the study and the theoretical perspectives established in the literature review.

3.7 Period of Production

The production processes for the bone sculptural works lasted for Eight (8) months as shown below:

- | | | |
|----|---|------------|
| a. | The Ideation Process (Design/Drawing and Approval)- | 1 Month |
| b. | Marquette | - 1 Month |
| c. | Collection of desired bones | - 3 Weeks |
| d. | Cleaning and treating of bones | - 1 Months |

e.	Slicing, Carving, Engraving, Assemblage, etcetera	-	3 Months
f.	Working on Metal frame	-	1 Month
g.	Mounting	-	1 week
	TOTAL	-	8 Months

3.8 Cost Estimate for Production

a.	4 Camel Skulls @ ₦50,000/skull	-	₦200, 000.00
b.	Cow Skull Scraps (136kg) @ ~~₦~~ 400/kg	-	₦54, 000.00
c.	Board	-	₦50, 000.00
d.	Araldite (20pieces) @ ₦8,000/piece	-	₦160, 000.00
e.	Bolts, washers and nuts	-	₦30, 000.00
f.	Acrylic colours	-	₦50, 000.00
g.	Metal for Framing	-	₦50, 000.00
h.	Cement (1bag)	-	₦12,000.00
i.	Transport	-	₦100,000.00
j.	Hydrogen peroxide (5litres) @ ~~₦~~ 3,000/litre.	-	₦15,000.00
k.	Ethanol (7litres) @ ₦1,000/litre.	-	₦7,000.00
l.	Detergent	-	₦10,000.00
m.	Miscellaneous (10% of Total Expenses)	-	~~₦~~73,800.00
	TOTAL	-	₦811, 800.00

(Eight hundred and Eleven thousand and Eight hundred Naira Only).

3.9 Materials and Tools

The materials, tools, and equipment utilized in the production process of the research were classified under the following categories:

- i. Materials and Tools used for treating the Bones
- ii. The Treated Bones (Skulls, Skull Parts, and Appendages)
- iii. Materials and Tools used for Joining of the Bones
- iv. Materials and Tools used for Engraving, Drilling, Slicing, and Cutting of the Skulls and Skull Parts
- v. Other Materials (Medium) used for Producing Mixed Artworks with the Bones (Skulls and Skull Parts)
- vi. Other Tools and Materials that were used.

3.10 Materials and Tools that were used for treating the skulls and skull parts

The following are the materials that were used for treating, preservation, cleaning and drying the bones for the safety of the researcher and the researcher assistance, and the general public.

- **Bones (Camel and Cow):** The camel and cow skull, as well as other parts engaged by the researcher
- **Hydrogen Peroxide:** It is a chemical compound with the formula H_2O_2 . It is used as a bleaching agent and antiseptic in the course of the study. It is also used in disinfecting and cleaning the bones (skulls, skull parts and appendages) before taking them into the studio for exploration. Thus maintaining and retaining the original colour of the bones (skulls, skull parts and appendages).
- **Ethanol:** Also called ethyl alcohol, grain alcohol or alcohol, a member of a class of organic compounds that are given name alcohols; Ethanol is an important industrial chemical; it is as a solvent, in the synthesis of other organic chemicals, and as an additive to automotive gasoline. In the course of this study due to its

evaporative nature, it was adopted as a washing and drying agent for the bones. It made the bones (skulls, skull parts and appendages) to dry fast without denaturing the bones. It also functions as an antibacterial agent which is paramount in the course of the study for the safety of the researcher and the research assistants.

- **Detergents:** The detergent was made use of as well, as a washing agent at a particular stage of the cleaning of the bones (skulls, skull parts and appendages). Deliberately the researcher made use of an antibacterial detergent thus making the bones (skulls, skull parts and appendages) safe for touch.
- **Water:** In this study water was profusely made use off, to clean the bones (skulls, skull parts and parts selected to be used) and to put an halt to further reactions of chemicals that were used in the cleaning of the bones in other to avert further reactions of such chemicals.
- **Plastic Bowls:** They are containers that will contain the bones while different cleaning activities were carried out on the bones (skulls, skull parts and appendages).
- **Metal Sponge and Brush:** They were adopted to scrub the bones (skulls, skull parts and appendages) surfaces and interior corners of the bone due to its flexibility. After boiling it helps in the removing clotted blood, to wash away soil and stones after exhuming the bones (skulls, skull parts and appendages) from the soil in the case of burying technique.
- **Fire Wood (Fuel):** It was used to provide heat during the boiling of the bones (skulls, skull parts and appendages) in other to easily remove excess meat, fat and oil and blood.

- **Big Pots:** The bones (skulls, skull parts and appendages) were put inside theses big pots with water, while is place on fire to produce heat for boiling the bones.

3.11 The Treated Bones (Skulls, Skull parts and Appendages)

Figure 28

Treated and Stored Camel and Cow Skulls



Photo: Osiboye Oluwaseun Opeyemi, 2024.

Figure 29

Other Bone Parts



Photo: Osiboye Oluwaseun Opeyemi, 2025.

3.12 Materials and Tools Used for Joining of the Bones

The joining of bone components in the course of this study required a variety of materials and tools to achieve structural integrity and aesthetic coherence. These included both mechanical fasteners and chemical adhesives, carefully selected to suit the physical nature of the bone and other materials used.

- **Araldite Gum:** Araldite is a type of epoxy adhesive composed of two parts, which, when mixed, undergo a chemical reaction that creates a strong, durable, and rigid bond. It dries clear, is water-resistant, and suitable for bonding a wide range of surfaces. In the context of this study, Araldite was used to bond bone to bone, as well as bone to other materials such as wood and metal often reinforced further using mechanical fasteners like screws, bolts, and nuts for structural support.
- **Binding Wire:** Binding wire, typically made of pliable steel, was employed to temporarily or permanently tie components together. Its flexibility made it especially useful for reinforcing jointed areas and holding parts in place during curing or structural alignment.
- **Arc Welding Machine:** The arc welding machine was used in instances where metal components needed to be joined. Arc welding involves generating intense heat through electricity to melt and fuse metal parts, which, when cooled, form a solid and stable bond. This technique was applied to integrate metal structures within the artworks.
- **Screws:** Screws were used to fasten bone to wooden or metal backings. These self-threading fasteners grip surfaces securely by creating internal threads as they

are driven into the material, thus ensuring tight assembly and stability, particularly in load-bearing sections.

- **Bolts and Nuts:** Bolts, used in combination with nuts, served to join two or more components securely. Apart from their structural function, bolts and nuts were also deployed to enhance the aesthetic detailing of some artworks, offering a visual contrast to organic bone textures.
- **Nails:** Nails, small metal spikes with flattened heads, were primarily used to fasten wooden components in the substructure or frame supporting the bones. They served effectively in joining wooden surfaces or anchoring bone to wooden bases.
- **White Glue (Top Bond):** Commonly referred to as wood glue or white glue, this adhesive is used primarily for porous materials such as wood, cloth, and paper. It was used in select areas where lightweight wooden parts were incorporated into the sculptural composition.

3.13 Materials and Tools Used for Engraving, Drilling, Slicing, and Cutting of the Skulls and Skull Parts

To achieve various aesthetic and structural modifications in the sculptural process, a range of tools and equipment were utilized to engrave, drill, slice, and cut the camel and cow skulls and their respective parts. These tools provided precision and control essential for manipulating the bone medium according to the creative intentions of the researcher.

- **Drilling Machine:** The drilling machine was employed to bore holes of different diameters on various surfaces. Fitted with interchangeable drilling bits, it was used both functionally to allow fastening with bolts and nuts and decoratively, contributing to the surface articulation of the sculptural pieces.
- **Manual Metal Files:** A variety of manual files of different shapes and sizes served as modeling tools for refining bone surfaces. These were particularly useful in smoothing, shaping, and adding detailed linear aesthetics, allowing the bones to take on specific tactile and visual characteristics in line with the intended form.
- **Hack Saw:** The hack saw was employed to manually cut through bone when a slower, more controlled method was required. This tool proved especially useful in circumstances where mechanical devices such as angle grinders posed difficulty in manipulation or risked damaging the intended form.
- **Diamond Cutting Disc:** This tool, typically mounted on a rotary machine, was used for cutting particularly hard surfaces like teeth. Its fine edge and rotational speed provided a clean and precise cut suitable for the delicate structure of dental materials within the bone composition.
- **Drilling Bits:** These are interchangeable metal components that come in various sizes and are affixed to a drilling machine. They enabled the researcher to bore holes of diverse diameters into bone, wood, and metal, depending on the technical and compositional requirements of each artwork.
- **Safety Goggles (Eye Protection):** A vital piece of safety equipment, goggles shielded the eyes from dust, fragments, and chemical splashes. Specialized

goggles were also used to protect the eyes from ultraviolet light during welding operations.

- **Nose Mask:** The nose mask was used to safeguard the respiratory system, especially during procedures that generated airborne particles, such as bone cutting and grinding. It was also crucial during the mixing of substances like catalyst, accelerator, and resin that could release toxic fumes.
- **Angle Grinder:** This versatile power tool was employed for deeper incisions and sculptural detailing. Its function depended on the attachment used, cutting discs, sanding pads, or grinding wheels. The angle grinder was used to cut bone and metal, grind surfaces, and sandpaper materials to desired textures and finishes. It was especially effective in creating both geometric and organic surface incisions on bone surfaces.

3.14 Other Materials (Media) Used for Producing Mixed-Media Artworks with Bones (Skulls and Skull Parts)

In order to explore the aesthetic and conceptual possibilities of combining bone with other sculptural materials, the following media were utilized in the creation of mixed-media artworks. These materials were selected for their compatibility with the bone surfaces and their potential to expand the visual and textural dynamics of the final compositions.

- **Kaolin Powder:** Kaolin, a fine white clay mineral, was used as a filler and textural agent. When combined with a binder consisting of resin, catalyst, and

accelerator, it provided a malleable compound that was applied to bone surfaces to generate textural contrast and support sculptural form.

- **Metal Rods, Scraps, and Plates:** These metallic elements were integrated into the sculptural works to complement and embellish the bone material. Their incorporation enabled the artist to investigate the material relationship between organic (bone) and inorganic (metal) components, thereby establishing a visual dialogue that enhanced the expressive capacity of the artworks.
- **Resin, Catalyst, and Accelerator:** This three-part synthetic binder was used to solidify the mixture of kaolin and bone dust applications, in some instances, functioned as an adhesive for assembling sculptural components or attaching artworks to their bases. The chemical interaction among these substances allowed for a durable, fast-setting bond that could adhere to diverse materials including bone, metal, and wood.
- **Acrylic Colours:** Acrylic paints were employed as part of the mixed-media exploration to test the feasibility and effect of applying colour to bone surfaces. When combined with metal scraps, rods, and plates, the application of acrylics introduced vibrant visual elements that enhanced the conceptual narrative and aesthetic appeal of the artworks. This experimentation confirmed the viability of acrylics as a colouring medium on unconventional surfaces such as camel and cow skulls.

3.15 Other Tools and Materials that were used

In addition to the primary materials and tools, the following items played supporting roles in facilitating both the technical and aesthetic aspects of the sculptural

production process. These tools ensured precision, safety, and efficiency across various stages of bone manipulation and mixed-media assembly.

- **Leather Skin Hand Gloves:** These served as essential protective gear throughout the production process. Their use significantly minimized the risk of injuries to the hands during operations involving cutting, grinding, welding, and handling hazardous materials.
- **Metal Vice:** The metal vice functioned as a stabilizing device, securely holding bones, metal scraps, or wooden pieces in place during cutting, drilling, filing, and grinding. It ensured precision and safety during these high-intensity tasks.
- **Electrodes:** These were used in arc welding to conduct electric current and facilitate the fusion of metal components. They enabled the secure joining of metallic parts to form structural or decorative elements within the sculptural compositions.
- **Ultra-Violet Welding Helmet:** This safety gear protected the eyes and face from harmful light rays emitted during welding or grinding processes. It was especially useful in shielding the user from ultraviolet and infrared radiation.
- **Spatulas:** Serving as both modeling and application tools, spatulas were used during the clay modeling stages and for applying substances such as Araldite, resin, or kaolin mixtures onto various surfaces. Some were improvised in the studio with tailored designs to meet specific production needs.
- **Hammer:** The hammer was used both as a fastening tool (e.g., for driving nails into wooden surfaces) and as a destructive tool when bone fragmentation was

required for artistic effects, particularly in works that employed crushed bone textures.

- **Measuring Tape:** This flexible measuring device was used to determine accurate lengths and distances, contributing to structural balance and spatial planning during construction.
- **Metal Brush:** The metal brush was employed to clean metal surfaces, particularly to remove carbon residues after welding, thereby improving surface finish and bonding effectiveness.
- **Smooth and Rough Sandpaper:** Both grades of sandpaper were used to refine surfaces by removing irregularities. They were applied to bones (skull and its individual parts), wood, and other materials to ensure a smooth, professional finish during and after assembly.

3.16 Method of Data Analysis

The data collected in this research were analyzed through a combination of descriptive, visual, and reflective methods, which are appropriate for a studio-based art investigation. The analytical process began with the development of exploratory visual sketches, which served as both interpretive and developmental tools. These preliminary drawings facilitated the articulation of ideas and helped visualize concepts before their transformation into three-dimensional sculptural forms.

The descriptive method was adopted due to its suitability for analyzing artworks through close observation and interpretive explanation. This approach enabled the researcher to examine each sculptural piece from multiple dimensions including form,

function, material, and meaning offering a holistic understanding of the artworks. The method focused not only on technical manipulation of materials but also on the aesthetic arrangement of forms and their thematic resonance.

As Egonwa (2012) explains, analysis involves the systematic breakdown of a subject into its constituent parts, understanding the interrelationship of these parts, and interpreting their collective meaning. He emphasizes that visual analysis helps uncover how specific formal elements contribute to an artwork's overall message and aesthetic experience. Similarly, Egiolamhen (2019) notes that visual analysis requires identifying both prominent and subtle features within a composition that either enhance or diminish its communicative power.

In this study, studio practice functioned both as a method of inquiry and a site of analysis. The hands on manipulation of materials, especially animal bones from camel and cow skulls and appendages was not only a technical process but also an investigative and reflective one. Actions such as engraving, slicing, assembling, and combining these bones with other media (e.g., metal, resin, kaolin, acrylic paint) became part of a visual inquiry, generating insights through the material itself.

This practical, immersive engagement aligns with Gray and Malins' (2004) assertion that studio-based research involves "thinking through making," where the process of creation becomes a legitimate form of knowledge production. The artistic decisions made ranging from compositional choices to material integration, represented forms of tacit knowledge, cultivated through doing, reflecting, and re-doing.

Throughout the creative process, reflexivity played a central role. The researcher maintained an ongoing dialogue with the materials and forms, constantly reflecting on

their aesthetic, symbolic, and cultural implications. This reflective stance enriched both the process and the final outcomes, establishing a dynamic relationship between artistic intention and material execution. It also allowed for an embodied understanding of the expressive capacities of the chosen materials. Moreover, visual literacy was central to the analytical process. Formal elements such as texture, rhythm, balance, contrast, and spatial organization were critically assessed to determine how they conveyed meaning. As Elkins (2003) emphasizes, the ability to read and interpret visual language is essential in art-based research, where non-verbal elements often express complex narratives and cultural themes.

In sum, the data analysis method combined descriptive observation, visual deconstruction, material engagement, and reflective interpretation. Each artwork was evaluated in terms of its formal properties, thematic significance, material composition, and cultural context. This multi-dimensional approach ensured a comprehensive understanding of the bone-based sculptures, capturing not only their technical sophistication but also their conceptual depth and cultural resonance.

3.17 Method of Visual Analysis and Discussion

The formalism approach was adopted for the visual analysis of the bone (skull and its individual parts) sculptures produced in this study. Formalism emphasizes the intrinsic visual and compositional qualities of an artwork, such as line, shape, texture, balance, and spatial organization, rather than its narrative or contextual associations. According to Bell (1914), a pioneer of this theory, “significant form” in visual art is what evokes aesthetic emotion, regardless of subject matter. This approach is especially

valuable in evaluating the bone (skull and its individual parts) sculptures, which rely on deliberate compositional arrangement, material interaction, and tactile surface treatment.

In alignment with the formalist model, the visual analysis followed structured stages of critique while being guided by the study's conceptual framework and research objectives. The analysis critically examined visual elements such as concept, medium, texture, colour, size, pattern, movement, style, and technique, evaluating how each contributes to the aesthetic resonance and expressive strength of the sculptures.

Additionally, the adoption of formalism is consistent with perspectives in African visual arts scholarship. As Filani (2002) observes, formal analysis allows for a deeper appreciation of African artistic expressions by focusing on indigenous aesthetics, material innovation, and structural integrity. This made formalism an effective method for engaging with the creative and symbolic dimensions of the bone (skull and its individual parts) and mixed-media sculptures developed in this study.

CHAPTER FOUR

THE PRODUCTION PROCESS

This chapter presents a systematic exposition of the methodological procedures adopted in the execution of the studio-based component of this research. The production process is organized into two principal phases: the pre-studio production phase and the studio production phase. Each phase plays a distinct but complementary role in the overall development of the sculptural works.

4.1 The Skull and Its Major Components

The skull is a bony framework forming the head in vertebrates (Figure 30 and 31) below. It supports the structures of the face and encloses the brain within a protective cavity. Anatomical study distinguishes two principal segments of the skull: the cranium (sometimes called the braincase) and the mandible (lower jaw). The cranium comprises the vault and base that encase the brain and associated sensory organs, whereas the mandible is the only movable bone, forming the lower jaw.

Beyond structural support, the skull houses multiple sensory and functional appendages, including the teeth, upper and lower jaws (maxilla and mandible), eye sockets (orbits), and associated nasal and auditory cavities. In vertebrates, these components collectively integrate with the cranium to facilitate respiration, vision, mastication, and communication

Figure 30

Cow Skull



Photo: Osiboye Oluwaseun, 2020

Figure 31

Camel Skull



Photo: Osiboye Oluwaseun, 2020

Tamuli (2014) also informs that, heads accommodates one of the most vital parts of the body, the brain. Although it is well protected in a bony cranial cage, it still remains one of the vulnerable parts of the body. The three skulls are regarded as bone but with different forms that will suggest different visual interpretations as well. The presence of horn in the cow skull (Figure 30 above) which did not appear in camel skull (Figure 31 above) is a major difference. The presence of dental dentition is observed in the two skulls and some other outlet or inlets in to the skull are observed as well. This will be treated and enhanced in whole and in parts, probably with other medium to give different visual interpretations with the aim of achieving the objectives of the study. It is pertinent to note that the jaw part of skull is not prominent in the cow skull but very elaborate in the camel skull.

4.1.1 Jaw Bones

The jaw bones of a cow (Figure 12 below), in the middle of the jaw bone are the teeth. The jaw bone can be observed separately, that is left and right side, unlike the jaw bone of camel (Figure 14) which is one. They do not have joint at the chin as it is observe in the cow. Around the chin side at the lower jaw, there appear some incisors teeth for both camel and cow. Also there forms could suggest different visual representation to the study.

Figure 32

Cow Jaw Bones with Teeth Attached.



Photo: Osiboye Oluwaseun, Opeyemi, 2023

Figure 33

Full Camel Skull



Photo: Osiboye Oluwaseun Opeyemi, 2023

Figure 34*Camel Jaw Bone.***Photo:** Osiboye Oluwaseun Opeyemi, 2023

4.1.2 Teeth

As observed, the teeth are appendage to the skull (cranium) as well as the jaw (mandible) (Figure 12, 13 and 14 above) and can also be very helpful in identification down to the species level for mammals. Depending on what the animal eats, whether it was a carnivore, herbivore, omnivore, or insectivore, the location, size and shape of the teeth are different to reflect the type diet (Sullivan 2013). She explained further that, carnivores have large canines and incisors to rip apart meat while herbivores have large molars and pre-molars for grinding plant material. Omnivores (like in humans) have a little of both. Dayton (2018) opines that teeth can be a giveaway as to what category an animal fits. This isn't always the case, but herbivores more typically have flatter teeth for

grinding up vegetation. For instance it was observed that the cow has no upper and frontal teeth (incisors)

In summary, the dentition of an animal could suggest the kind of animal in question. Animals with more of premolar and molar but few canine and incisors as the case is for camel and cow, the subject animal, for this study is herbivore which means animal that eats only plants (Dayton, 2018).

4.2 Skull as a Medium

The process of harnessing the available resources to create and sustain the adaptation of materials for sculpture is transformation. All materials seem to be in a state of fluidity and can be transformed into different forms. The call to reduce and recycle disused materials and objects is a welcome development for sustainable environment. For visual artists, reused, up-cycled and recycled materials often have different meanings than they appear to the outside world. Many artists are specialized in making trash into artistic treasure.

Feldman (1967:28) states that the sculptor conceives ideas using materials with relevant tools and techniques to produce his or her concept visually in two or three dimensions. These materials could be organic or in-organic materials which in most cases are fashioned out of natural materials found around the artists local or foreign environment. Material (2019) explains that synthetic or artificial materials are those whose natural origins have been significantly altered via chemical processing and human intervention, such that their properties and character differ markedly from their original state. Feldman also states that “all materials are suitable for the purpose which the

ingenuity of artists and designer can discover, material become inferior when they are employed improperly, lacking reasonable durability, honesty of appearance and poor craftsmanship.”

Greer (1974:36), states that science and technology have made it possible to preserve, subdue and adopt materials for use in sculpture. Some artists prefer to see and feel the natural (material) finishing of sculptures, while others explore the possibilities of science and technology by stimulating natural materials to create uniqueness in their work or to enhance its appreciation and marketability.

The skull before now is seen as a symbol of death, cult, revered and it is feared but in recent times, skull has found a noticeable place in the world of art (Tamuli, 2014). The contemporary and modern arts have witnessed a significant transformation in the use of skull in art. As skull art progresses, its initial origins as a symbol of death and other negative impression, has change into a dynamic and multipurpose form of expression. Artists have not only clinched to the rich skull’s history but have also filled it with contemporary importance, ensuring its continued attraction and significance in the art world.

The skull is an important part of the body to either humans or animals. In some cultures in Nigeria, ‘heads’ are worshiped (the head becomes skull after the removal of the skin and flesh). Some of these cultures include the Yoruba speaking people the Gbagyi people, amongst others. The Yoruba people have great regard for the head (Ori) and there is a group of priests known as Aw’ori (secret of the head). The Yoruba speaking people regard the head as the source of life that controls that individual’s destiny (Lawal, 1985), hence sometimes, the head is used as a source of prayers. For

example, “*Ori mi oni gba bode*”, meaning “my head will not attract misfortune”. It is generally believed that the head represents individuals.

The Gbagyi people demonstrate this cultural reverence through the prohibition of carrying loads on the head. This is based on the belief that the head represents the “king” of the body and, as such, must be accorded the highest level of respect (Orisaremi, 2020; Yakubu, 2023).

Apart from the cultural value, the skull serves as religious, spiritual, and other symbol that is highly respected. Skull carries symbolic meanings across cultures, representing death, rebirth, protection, or spiritual transformation. According to (Panofsky, 1955; Gombrich, 1960; Cirlot, 2002) Symbols constitute one of the most potent devices in visual practice. A single, ostensibly simple object can function as a condensed signifier that evokes social meanings, affective responses, and extended narratives. Thereby serving as a primary mechanism through which artworks communicate culturally and historically situated concerns.

Within this symbolic framework, skulls occupy a complex and often ambivalent position, as their meanings vary widely across cultures. In many contexts, the sight of a skull evokes fear and unease, largely due to its association with mortality, danger, and the supernatural. This perception is reinforced by the cultural belief that the head represents the source of life and the seat of destiny, making the skull a powerful yet often misunderstood symbol. Consequently, animal skulls such as those of cows and camels are frequently dismissed as valueless remnants once their flesh and skin have been consumed.

4.3 How to Clean and Prepare the Skull

In order to be comfortable working with the bones as an artist and to minimize health hazards to the barest minimum. The skulls need to be properly washed, treated and sanitized so as to preserve the bones. As well as to avoid any bacterial infection in the process of handling the bones.

According to Aggarwal, Gupta, Goyal, and Kaur (2016), various methods can be employed for cleaning bones, including burying, manual scraping, boiling, and maceration in water. Each selected based on the desired level of preservation and the condition of the skeletal material. In this study, these methods are adopted not merely for anatomical preservation but as preparatory processes for sculptural experimentation. Where cleaned skulls serve as primary media for artistic exploration and creative transformation. but [Claire](#) (2017) suggests the following when cleaning up a skull:

Figure 35

Fresh Frozen Head of a Pig.



Source: <https://lifehacker.com/how-to-clean-animal-bones-so-that-you-may-proudly-displ-1798191351> August 24, 2019

There are many different paths you can take when cleaning up skulls. One can leave the skull out in a field (though they may get stolen by man or beast), toss them in a bin of beetles, or slow cook them. In order not to stretch the tolerance levels of her cotenants in enduring the stench the first two methods may result into, she decided to explore the third option.

Figure 36



Source: <https://lifehacker.com/how-to-clean-animal-bones-so-that-you-may-proudly-displ-1798191351> August 24, 2019

Some sites recommend cleaning bones in boiling water, but that can be a little harsh on the biological treasure, and can lead to fat permeating the bone. Instead a low and slow cooking method, using immersion circulator or a slow cooker is very effective in the cleaning process.

Figure 37



Source: <https://lifehacker.com/how-to-clean-animal-bones-so-that-you-may-proudly-displ-1798191351> August 24, 2019

After 24 hours at 165°F, lots of meat and gristle can be pulled away I was able to pull away a lot of meat and gristle, including some meat that had escaped knife during butchering.

Figure 38



Source: <https://lifehacker.com/how-to-clean-animal-bones-so-that-you-may-proudly-displ-1798191351> August 24, 2019

Figure 39



Source: <https://lifehacker.com/how-to-clean-animal-bones-so-that-you-may-proudly-displ-1798191351> August 24, 2019

Figure 40



Source: <https://lifehacker.com/how-to-clean-animal-bones-so-that-you-may-proudly-displ-1798191351> August 24, 2019

A bit of the brain was also out through the back of the skull, using a bottle brush and a lot of running water.

Figure 41



Source: <https://lifehacker.com/how-to-clean-animal-bones-so-that-you-may-proudly-displ-1798191351> August 24, 2019

A few meat bits clung to the skull, however, and the nose cartilage necessitating putting the skull back in a brining bag for another overnight stint in the sous-vide bath.

Figure 42



Source: <https://lifehacker.com/how-to-clean-animal-bones-so-that-you-may-proudly-displ-1798191351> August 24, 2019

After another 12 hours, the last bits of flesh, connective tissue, brain, and cartilage were pulled out and off of the skull. Many teeth that came off at this point were gathered preserved.

Figure 43



Source: <https://lifehacker.com/how-to-clean-animal-bones-so-that-you-may-proudly-displ-1798191351> August 24, 2019

The next step involved soaking the skull in a vat of soapy water (degreasing) before bleaching.

Figure 44



Source: <https://lifehacker.com/how-to-clean-animal-bones-so-that-you-may-proudly-displ-1798191351> August 24, 2019

Figure 45



Source: <https://lifehacker.com/how-to-clean-animal-bones-so-that-you-> 2019

Figure 46

After Washing with Detergent and Rinsed in Water



Source: <https://lifehacker.com/how-to-clean-animal-bones-so-thatyou-may-proudly-displ-1798191351> August 24, 2019

The final stage of bleaching involved the use of many bottles of hydrogen peroxide (the 3% solution available at the pharmacy) for the bones intense cleaning.

Figure 47

A Skull in Hydrogen-Peroxide Solution



Source: <https://lifehacker.com/how-to-clean-animal-bones-so-thatyou-may-proudly-displ-1798191351> August 24, 2019

The skull is then covered and left in the peroxide bath until it lightened up (this took about six hours). Thereafter it is rinsed well and dried fully. Teeth were glued back and the resulting white glow of dried the “treasure” was quite impressive.

Figure 48



Source: <https://lifehacker.com/how-to-clean-animal-bones-so-that-you-may-proudly-displ-1798191351> August 24, 2019

Burying

Diane (n.d) also identifies another method of cleaning bones through nature, which can be adopted for skull. This has to do with burying of the bones which is stated as follows:

- Alternatively, one can bury the bones. Worms/ Bugs/ Bacteria will consume away the flesh on the bones. But this takes a long time i.e (2-3months)
- During this long period of 2-3months, scavengers might dig up bones that are buried. Therefore, to keep your bones safe, a wire mesh (for larger bones) or a

muslin sack (for smaller bones) is recommend for packaging the bones before burying.

- Alternatively, bones can be left outside. Insects like ants will eat away at the tissue. Microbes will also go to work. Preferably, the bones can be placed in a wire cage so animals don't carry them off but insects can still get in".

The study practiced the two methods of cleaning bone that was suggested by Claire (2017) and Diane (n.d) and observed critically that which suits the purpose of the study. The consideration of the method of cleaning bone to be adopted for the study will be based on the following factors, such as time, cost, colour, the retained physical strength of the bone after cleaning and health safety.

4.4 Pre-Studio Production

The pre-studio production phase focuses on the preliminary operations carried out prior to actual studio manipulation. This phase involves the identification, selection, and collection of skulls and skull fragments from abattoirs, followed by meticulous cleaning, treatment, and preservation procedures. These procedures are essential for eliminating organic matter, preventing material degradation, and preparing the bones for artistic engagement. Beyond their technical significance, these preparatory activities also serve a conceptual function: they represent the deliberate act of reclaiming and re-contextualizing discarded biological forms as valid sculptural media.

4.4.1 Studio Production

The studio production phase encompasses the practical and technical processes of modeling, construction, and assemblage undertaken during the creation of the artworks.

This includes material manipulation, structural reinforcement, compositional planning, integration of mixed media, and surface finishing techniques. The methods employed at this stage were informed by both sculptural experimentation and theoretical considerations, ensuring that material decisions were aligned with the conceptual objectives of the study.

Collectively, these two phases demonstrate a rigorous methodological framework that integrates technical precision with artistic inquiry. The production process, therefore, extends beyond mere fabrication; it constitutes an integral component of the research methodology through which the skull is critically examined, transformed, and repositioned as both material and metaphor within contemporary sculptural discourse.

4.4.2 Pre-Studio Production Phase

The pre-studio production process involves the collection of skull and skull fragments from the abattoir and their systematic preparation for subsequent studio production activities. This preparatory stage is essential because the physical integrity, cleanliness, and stability of the skull and skull fragments significantly influence their suitability for sculptural manipulation and conceptual engagement during the studio phase.

4.5 Processes Adopted for Skull and Skull Fragments Maceration

The cleaning and preservation of bones is generally referred to as maceration, which in this study constitutes a critical procedure within the pre-studio production phase. Maceration involves the removal of soft tissues from bones without causing

damage or alteration, thereby preparing them for further investigation and use (Christian, Margit, Helmuth & Irene, 2021). It was further stated that the bone(s) must be clearly visible and accessible for a forensic examination of perimortem or antemortem. A clean and dry bone provides ample room for detailed study, of which sculpting is one; therefore, the maceration of skull and skull fragments is a process that cannot be overemphasized.

There are different methods of cleaning bones. Ajayi, Edjomariégwe and Iselaiye (2016) stated that a number of techniques have been employed over the years in the preparation of bones for anatomical studies. These methods include the use of insects, chemicals, and enzymes. This is also confirmed by Christian, Margit, Helmuth and Irene (2021), who noted that various bone preparation techniques have been used in the past. It was further explained that de-fleshing techniques, meaning maceration, can be divided into six types: bacterial maceration with cold water, bacterial maceration with warm water, enzymatic maceration, chemical maceration, maceration via cooking, and invertebrate maceration.

In this study, the boiling technique (maceration via cooking) was studied, observed, and adopted. This method was found to be the most practical and suitable for preparing skull and skull fragments for sculptural purposes, particularly due to its efficiency, speed, and ability to retain the structural form of the bone. Claire (2017) influenced the adopted procedure for the boiling method of maceration, which became the standard technique for processing the collected materials.

4.5.1 Preparation of Skull and Skull Fragments for Sculptural Use

During the literature review, it was observed that there are numerous methods and techniques for the cleaning and preservation of bones for artistic, anatomical, or forensic purposes. After a careful evaluation of these methods, this study selected two specific maceration techniques for practical exploration based on clearly defined yardsticks. The selection criteria were as follows:

- i.** The method should ensure that the sculptor remains comfortable manipulating the skull and skull fragments after the cleaning process has been carried out.
- ii.** The method should retain the natural colour and structural integrity of the bone, avoiding any chemical reactions or processes that could lead to dematerialization or surface degradation.
- iii.** The method should be cost-effective, easy to implement, and less time consuming, considering the studio context in which the work is undertaken.

Based on these yardsticks, the boiling and burying maceration techniques were identified as the most appropriate for this study. Both methods were explored during the preparatory phase (Pilot Study) and proved effective for cleaning skull and skull fragments. However, the boiling technique was ultimately found preferable to the burying technique due to its speed, predictability, and ability to preserve the bone's surface characteristics with minimal contamination.

4.5.2 Burying Technique of Cleaning Skull and Skull Fragments

The burying technique was employed as one of the preparatory methods for cleaning skull and skull fragments. The following procedural steps outline the method adopted:

Step 1: Sourcing and Collection of Camel and Cow Skulls and Skull Fragments

The process began with the collection of camel and cow skull and skull fragments from the abattoir. Some of the specimens were obtained fresh, still dripping with blood, while others were collected in various stages of decomposition. The latter category often presented a particularly unpleasant sight, as the decomposition process had already begun, requiring additional care during handling.

Step 2: Site Preparation and Burial Arrangement

A suitable location near the studio (Figure:) was identified, and a pit was excavated using preferably loamy soil, which supports natural microbial activity. The depth of the pit was approximately two feet, providing adequate coverage to facilitate decomposition of soft tissues while protecting the bones from disturbance. Each skull and skull fragment was numbered systematically to ensure proper identification and accountability during the excavation stage. This precaution minimized the risk of loss or misplacement of fragments during the burial and retrieval process.

Figure 49

The Researcher Digging the Bone Pit.



Photo: Angus-Peters Orekwu, 2024

Step 3: Burial of Bones for Natural Decomposition

The collected skull and skull fragments were carefully arranged in the prepared pit (Figure 39) below to ensure that each specimen was adequately spaced, allowing for even decomposition. Particular attention was given to the placement of soil in between and around the bones, ensuring that all surfaces were in contact with the loamy soil. This arrangement is crucial because it facilitates effective microbial and insect activity, which accelerates the maceration process.

After the arrangement (Figure 41a-b) the skull and skull fragments were completely covered with soil, forming a compact layer that excluded excess air while maintaining suitable moisture conditions for decomposition. The bones were then left in the soil to undergo a natural decaying process. During this period, microorganisms, insects, bacteria, and maggots actively consumed the remaining soft tissues, gradually

stripping the bones clean without the application of chemicals. This stage is essential, as it allows the organic matter to decompose naturally, thereby preserving the structural integrity and natural coloration of the bones qualities that are important for their eventual use in sculptural production.

Figure 50 and 51

Selected Camel and Cow Skulls Arranged in Side Pit



Photo: Osiboye Oluwaseun, 2024

Step 4: Exhumation and Initial Decontamination of Skull and Skull Fragments

After approximately ten weeks and several days, the buried skull and skull fragments were carefully exhumed from the soil (Figure 43a-b) below. The excavation process was carried out with deliberate caution to avoid accidental breakage or loss of smaller fragments, as the bones had become more fragile due to prolonged burial and microbial activity. Each skull and skull fragment was gently uncovered, taking care not to apply excessive physical pressure during retrieval.

Direct hand contact with the bones was deliberately minimized at this stage because microorganisms such as maggots, insects, and bacteria involved in the decomposition process were still active on the bone surfaces. To ensure safe handling and to begin the initial decontamination process, the exhumed skull and skull fragments were immediately soaked in a solution of antibacterial liquid detergent. This step served a dual purpose: it reduced microbial activity, making the bones safer to handle, and it initiated the preliminary cleaning process by loosening residual organic matter that remained attached to the bone surfaces.

Figure 52

Exhuming the Cow Skulls from the Soil



Photo: Angus-Peters Orekwu, 2024

Figure 53

Exhumed camel skull from the soil



Photo: Osiboye Oluwaseun Opeyemi, 2024

Step 5: Intensive Washing and Mechanical Cleaning of the Bones

At this stage, thorough cleaning of the skull and skull fragments commences. The process requires a substantial amount of water to effectively wash and flush out residual soil particles embedded within the crevices of the bones (Figure 44 below). Initially, the materials are soaked in a disinfectant solution to ease the subsequent washing and to ensure safe handling. This preparatory step is essential for eliminating insects, germs, bacteria, and other microorganisms that may still be present on the surfaces.

Figure 54

Soaked Exhumed Lower Jaw Bones of Camel and Cow.



Photo: Osiboye Oluwaseun Opeyemi, 2024

During the washing process, an iron sponge (figure 45 below) and a metal brush (Figure 46 below) were employed to aid the scrubbing of the skull and skull fragments, with detergent added to the water to enhance cleaning efficiency.

Figure 55

Washing the Exhumed Cow Skull Bones.



Photo: Angus-Peters Orekwu, 2024

Figure 56

Washing the Exhumed Cow Skull with Metal Brush.



Photo: Angus-Peters Orekwu, 2024

At this stage, all traces of tissue, marrow, and blood had already decomposed, and any residual organic matter observed was softened, allowing it to be easily washed and rinsed away from the bone surfaces and interior (Figure 48 below).

Figure 57

Washing the Exhumed Bones with Metal Sponge and Anti Bacteria Detergent



Photo: Angus-Peters Orekwu, 2024

After the initial rounds of washing, the researcher carefully removed the fragile bone flakes from the skull and skull fragments using a chisel and hammer (Figure 49). These flakes are typically located on the outer layers of the skull and are structurally weak, making them unsuitable as part of the sculptural components. Consequently, they were deliberately chipped off to ensure that only the stable portions of the skull and skull

fragments were retained. This removal process was carried out with precision to avoid damaging the main skeletal structure.

Figure 58

Chiseling Away Bone Flakes from the Already Washed Cow Skull



Photo: Angus-Peters Orekwu, 2024

It is important to note that an antibacterial detergent (Figure 49) was deliberately employed during the washing stage. This precautionary measure was taken to deactivate residual bacteria and micro-organisms that remained on the skull and skull fragments after maceration, thereby making them safe for physical handling and further studio manipulation. In situations where antibacterial detergents were unavailable, common disinfectants such as Dettol, Izal, Hypo, or Jik were added to the washing water to achieve a comparable sterilizing effect. This ensured that the biological agents

responsible for decomposition were rendered inactive, reducing the risk of contamination or infection during the subsequent sculptural processes.

Figure 59

Antibacteria Detergent for Washing the Bones.



Photo: Osiboye Oluwaseun Opeyemi, 2024

Step 6: Bleaching and Colour Stabilization

At this stage, the skull and skull fragments were subjected to bleaching using a hydrogen peroxide solution (Figure 50 below). The primary purpose of this step was to preserve and stabilize the natural bone colour without compromising the structural integrity of the material. The procedure involved soaking the skull and skull fragments in a hydrogen peroxide bath for several hours or, in some cases, overnight. The duration depended on factors such as the concentration of the hydrogen peroxide, the number of

bones immersed, the total volume of the solution and the state or stage at which the bones were retrieved.

The hydrogen peroxide solution was deliberately prepared at a mild, human-friendly concentration. This was to ensure that the solution did not irritate the skin during handling and, more importantly, to prevent any chemical denaturation of the bones that might undermine the aesthetic and conceptual objectives of the study. The solution fully covered the bones within the container, allowing uniform bleaching to take place. After soaking, the skull and skull fragments were thoroughly rinsed in clean water to neutralize any residual chemical activity and halt further bleaching effects. This careful rinsing was crucial to retain the bones' natural tone and to make them suitable for subsequent studio manipulations.

Figure 60

Hydrogen- Peroxide Used for Washing and Disinfecting the Skulls and its parts Bones.

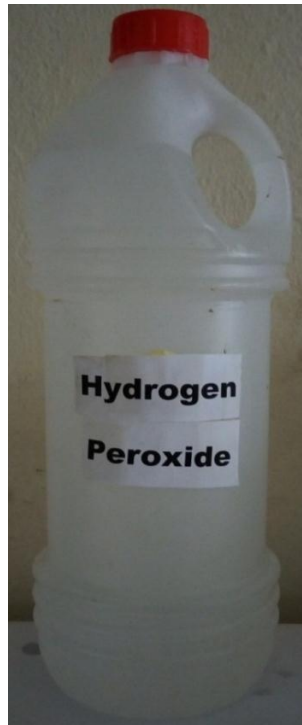


Photo: Osiboye Oluwaseun Opeyemi, 2024

The hydrogen-peroxide treatment given to the bones does not only make the bone clean but makes the bones safe health wise as well for the researcher and his studio assistants to make use of.

Suggested Bleaching Ratio and Duration

For the purpose of this study, a hydrogen peroxide concentration of 3–6% the standard range available in most pharmacies was considered both adequate and safe for handling. A measured quantity of ten millilitres (approximately one standard tablespoon) of hydrogen peroxide was diluted in twenty litres of water to prepare the cleaning solution. This dilution ratio was specifically adopted to preserve the natural coloration of the bones while preventing excessive whitening or structural weakening.

The skull and skull fragments were then fully submerged in the solution and left to soak for a period ranging between 6 to 12 hours, depending on the initial state of the bones. Fresher bones with minimal staining required shorter immersion (around 6–8 hours), while older or more heavily stained bones benefited from overnight soaking (approximately 10–12 hours).

During this time, the solution acted gradually, allowing natural bleaching without aggressive chemical action. After the set duration, the bones were carefully removed and rinsed thoroughly with abundant clean water to stop further bleaching and remove any chemical residue.

Step 7: Ethanol Washing and Surface Preparation

Figure 61

Ethanol



Ethanol Solution for Rinsing the skull and its parts

Photo: Osiboye Oluwaseun Opeyemi, 2024

At this stage, the skull and skull fragments were immersed and thoroughly washed in an ethanol solution (Figure 51). The use of ethanol served multiple purposes in the cleaning and preparation process. Firstly, it acted as an additional sterilizing agent, aiding in the removal of residual moisture and organic matter that might still be present after bleaching. Secondly, ethanol facilitated a more effective rinsing of the bones, allowing any lingering hydrogen peroxide or detergent residues to be fully flushed out.

Step 8: Drying of the Bones

Following the ethanol washing stage, the skull and skull fragments were arranged for draining and drying in a shaded, clean, and well-ventilated environment. Direct exposure to intense sunlight was deliberately avoided to prevent rapid dehydration, cracking, or surface discoloration. The bones were air-dried gradually, allowing moisture to evaporate evenly and naturally to maintain their structural integrity and surface texture. The drying process lasted between three and five days, depending on the size, thickness, and initial moisture content of each skull and fragment. Larger pieces required longer drying periods, while smaller fragments dried more quickly. During this period, the bones were periodically turned and inspected to ensure even drying and to prevent mould growth or damp retention in hidden crevices.

This drying stage marked the final step in the burying technique of cleaning, after which the bones were ready for manipulation and modelling in the studio. The final preservation of the bones such as sealing or surface finishing was deliberately postponed until after the completion of the studio production processes. This approach ensured that the natural surface of the bones remained workable and adaptable during sculptural manipulation, without the interference of protective coatings. The burying technique, as described in the preceding steps, proved effective for cleaning and preparing the skull and skull fragments for studio manipulation. Through controlled decomposition, careful exhumation, sequential washing, bleaching, ethanol treatment, and gradual drying, the bones were rendered clean, structurally stable, and suitable for artistic handling. However, while this technique offered a natural and low-cost method of preparation, it also required extended periods of time and close monitoring to achieve the desired

results. In order to address these time-related limitations and to explore alternative methods that could complement the objectives of this study, the boiling technique was subsequently adopted and systematically applied. This second method provided a more rapid approach to maceration and bone cleaning, while still maintaining the essential qualities required for sculptural use.

Boiling Technique of Cleaning Skull and Skull Fragments

Within the practical framework of studio-based sculptural experimentation, the boiling technique was adopted as an alternative maceration process for preparing skulls and skull fragments. This method was particularly suited to the demands of the sculptural studio, where control, timing, and preservation of material character are essential. Unlike the burying method, which relies on gradual biological decay, the boiling technique employs controlled thermal action to accelerate the removal of flesh and connective tissues, thereby allowing the artist to intervene more directly in the preparation process. This level of control is significant in sculptural practice, as it enables the preservation of fine anatomical details, surface textures, and the overall integrity of the bone structure, which are critical for subsequent creative manipulation. The technique was further refined to ensure that the skulls and fragments retained their natural bone colour and strength, providing a stable and visually coherent material base for sculptural transformation in the studio.

Step 1: Controlled Decomposition of Skull and Skull Fragments

Following the procurement of fresh skulls and skull fragments from the abattoir, it was observed that residual tissues, ligaments, blood, oil, and bone marrow were still

embedded on and within the bones. To facilitate easier subsequent cleaning, the bones were deliberately subjected to a controlled decomposition process. They were placed inside a sack and kept in a cool, shaded area for a minimum of three weeks, and longer where time permitted. During this period, moisture was intentionally retained around the bones to encourage the natural infestation of maggots, insects, and bacteria (Figure 52). This biological activity serves as an initial cleaning phase, as the organisms actively break down soft tissues, ligaments, and other organic remnants. Importantly, this stage significantly reduces the amount of energy and time required during the later boiling and washing processes, while also initiating a natural preparatory transformation of the skulls and fragments in readiness for sculptural manipulation.

Figure 62

Maggot Observed during the Decomposition of Bones



Photo: Osiboye Oluwaseun Opeyemi, 2024

Step 2: Boiling of Skull and Skull Fragments

At the peak of biological infestation, when maggot activity within the sack is most intense and the attached tissues have largely been consumed or transformed into a semi-

liquid, jelly-like substance, the skulls and skull fragments were carefully removed from the sack. They were briefly rinsed once or twice to reduce the presence of maggots and decomposed organic residue clinging to the surfaces. This preliminary rinsing also helped to minimize odours and prepare the bones for the subsequent thermal maceration stage.

The rinsed bones were then placed inside a large boiling pot (Figure 53) and subjected to heat generated by a naked fire produced from firewood. This traditional heating method was deliberately adopted by the artist to reflect locally available resources and to allow for a gradual and sustained build-up of heat, which is ideal for softening and loosening residual tissues without damaging the structural integrity of the bones. The use of firewood also provided a consistent and controllable thermal environment, ensuring that the boiling process complemented the earlier biological decomposition by facilitating thorough cleaning and effective maceration of the skulls and skull fragments for sculptural use.

Figure 63

Pots Used for Boiling Bones



Photo: Osiboye Oluwaseun Opeyemi, 2024

Figure 64

Boiling of the Skulls about to Commence



Photo: Photo: Josephine Igbekele, 2024.

Figure 65

The Boiling Process Commence Proper with the covering of the Pot



Photo: Josephine Igbekele, 2024.

Figure 66

The Researcher stirring the Skulls and Skull parts while Boiling



Photo: Josephine Igbekele, 2024.

The boiling process functions as a composite cleaning stage that encapsulates several sub-processes critical to the thorough preparation of skulls and skull fragments. Beyond its primary role of thermal maceration, boiling simultaneously facilitates other essential cleaning actions such as degreasing of the bones, surfactant-assisted deodorization, and de-fleshing. These sub-processes occur almost concurrently during boiling, working synergistically to soften, loosen, and remove residual organic matter while improving the tactile and structural quality of the bones. This multi-layered function of the boiling stage makes it a pivotal step in the overall preparation sequence,

significantly enhancing both the efficiency and effectiveness of the cleaning process prior to studio manipulation.

Step 3: Degreasing of the Bones

Degreasing is a critical stage in bone preparation, involving the removal of fats and oils that remain within the bone structure after the initial boiling (Figure 67). As the bones are subjected to heat, these greasy substances melt and rise naturally to the surface of the boiling water because oil is less dense than water. The researcher then carefully skims off the floating residues to prevent them from re-depositing onto the bone surfaces, thereby enhancing the overall cleaning efficiency (Figure 67 and 68 below).

Figure 67

The Researcher Attempting to Trap the Melted Fat and Oil on Top of the Boiling Water



Photo: Osiboye Oluwaseun, 2024.

Figure 68

The Removal of the Trapped Oil



Photo: Osiboye Oluwaseun Opeyemi, 2024.

According to the United States Environmental Protection Agency (n.d.), solvent degreasing is the physical process of using organic solvents to remove grease, fats, oils, wax, or soil from various materials such as metal, glass, or plastic. The selection of an appropriate solvent depends on factors including solubility, toxicity, flammability, evaporation rate, boiling point, and cost. Similarly, the European Environment Agency (n.d.) describes degreasing as a cleaning method for removing water-insoluble substances such as grease, wax, tars, and oils. Eversafe Academy (n.d.) further explains that liquid-phase degreasing involves immersing items in a heated solvent bath, allowing contaminants to dissolve.

In this study, the degreasing method draws from the solvent principle but substitutes boiling water for chemical solvents, leveraging heat to liquefy fats and oils embedded within the skulls and bone fragments. These substances are then manually removed from the water's surface. This procedure is essential for preparing bones for sculptural manipulation, as residual grease can compromise the adhesion of pigments, surface finishes, or binding materials, and may also affect the long-term preservation of the sculptural material.

Step 4 Surfactants-Assisted Deodorization

Surfactants-assisted deodorization refers to the deliberate process of eliminating the unpleasant odors emitted by bones as a result of prior decomposition. During decomposition, organic tissues break down and release volatile compounds that produce strong, offensive smells. To address this, a surfactant medium specifically, detergent was employed to neutralize these odors and leave the bones with a more tolerable, clean scent.

In this study, detergent (Figure 60 below) served as an effective surfactant by breaking down residual organic films and facilitating the removal of odor-causing substances from the bone surfaces. When applied during cleaning, the detergent lowered the surface tension of water, allowing it to penetrate crevices and dissolve remaining organic matter more efficiently. This process not only improved the olfactory quality of the bones but also supported subsequent handling in the studio by creating a more hygienic and manageable working material.

Figure 69*Surfactants Assisted Deodorization***Photo:** Josephine Igbekele, 2024.

The bones, remains of fatty acids, tissues and blood are all emulsifying, thus surfactants- assisted deodorization helps in removing fatty acids and other organic compounds responsible for unpleasant odors. It helps to reduce the surface tension of the water by allowing for more effective penetration and removal of odor-causing substances or softening them for easy removal by the researchers. Substances like maggots and their eggs, remains of flesh, tissue ligaments, blood.

Step 5: De fleshing

De-fleshing (Figure 60) is the preliminary stage in bone preparation that involves the careful removal of all remaining flesh, fat, and connective tissues attached to the skeletal structure. This process is essential for obtaining clean, odorless bones suitable for sculptural manipulation. In the context of this study, de-fleshing was carried out to ensure that the bones were properly sanitized and ready for carving, engraving, and other studio processes.

Figure 70

De-Fleshing through Mechanical Scrapping



Photo: Mojishola Osiboye, 2025

Figure 71

Controlled Heating of the Bones so as to remove the Remains (Flesh, Ligament, Tendons)



Photo: Igbekele Josephine, 2025

The technique was executed through a combination of mechanical scraping (Figure 60) and controlled heating (Figure 61), which helped to detach residual organic matter without compromising the structural integrity of the bone. This stage not only enhances the aesthetic appeal of the material but also prevents decay and odor, making the bones durable for studio exploration.

Figure 72

Pulling Out the Remaining Tissues after Boiling from a Camel Skull.



Photo: Osiboye Mojisola, 2024

Figure 73

Pulling Out the Remaining Tissues after Boiling from a Cow Skull.



Photo: Osiboye Oluwaseun, 2024

Figure 74

Appearance of Skull parts after Boiling (Lower Cow Jaw).



Photo: Osiboye Oluwaseun Opeyemi, 2024

After boiling, the ligaments, tissues, and bone marrow were carefully and easily removed (Figure 62 and 63). At this stage, the bones were ready for further cleaning and preservation processes (Figure 64). In cases where the bones were still oily, the boiling process was repeated, especially for the camel skull bones. It was also observed that the cow and camel bones should not be boiled together, as the camel bones required more boiling time compared to the cow bones. This was largely due to the higher concentration of fatty substances present within the camel bones (Figure 65) below.

Figure 75

Congeaed Fat that was removed from the Camel Bones during Degreasing.



Photo: Osiboye Oluwaseun Opeyemi, 2024

In addendum, the act of boiling also serves as a disinfecting and antibacterial measure. It helps to treat the bones and makes them safe for handling within the studio environment. Thus, the process not only prepares the bones structurally for creative exploration (up-cycling) but also ensures the researcher's safety and comfort during studio engagement.

Stage 6: Washing of the bones Skull and Skull Parts

After the boiling and de-fleshing processes, the bones particularly the skull and its components were thoroughly washed to remove any remaining residues (Figure 66) below. The washing was done with clean water and mild detergent to ensure that no traces of oil, dirt, or organic matter remained on the bone surfaces. This stage was

essential in achieving a clean, natural appearance before the bones were set out for other procedures.

The washing process also helped to expose the natural tone and texture of the bone, making subsequent stages of treatment and artistic manipulation easier. Care was taken during washing to prevent any breakage, especially around fragile or thin areas of the skull.

Figure 76

Washing of Skull and Skull Parts



Photo: Josephine Igbekele, 2024

The washing of the skulls and skull fragments required intentional studio improvisation, informed by an understanding of bone anatomy and the tactile demands of

sculptural practice. Each fragment, whether dense or porous, curved or flat responded uniquely to contact, pressure, and moisture. Thus, the cleaning process became not merely a technical step but a form of material dialogue between the researcher and the skeletal form. The selection of tools was guided by the structural behavior of the bones to ensure thorough cleaning. The following implements were improvised and adopted in the study:

i. Metal Sponge

Applied for moderately abrasive cleaning on compact, less porous surfaces, suitable for removing softened organic matter without scarring the cortical layer of the bone.

Figure 77

Metal Sponge used for Washing Skull

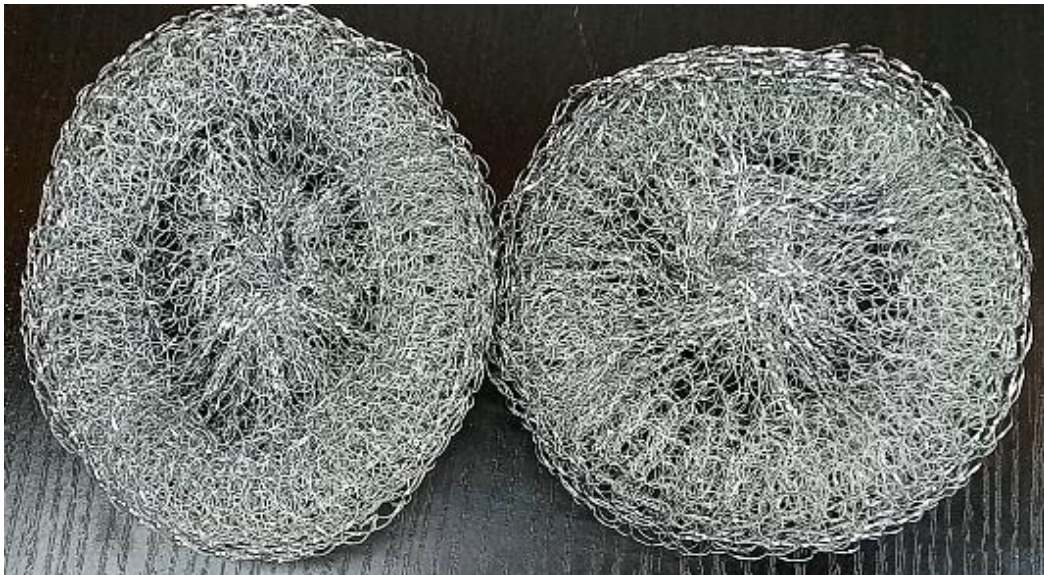


Photo: Osiboye Oluwaseun. 2024

Figure 78

Metal Sponge been used for Washing Skull and Skull Fragments



Photo: Josephine Igbekele. 2024

The metal sponge is flexible and easier to control. It is used in washing areas precisely corners where scrubbing brush and metal brush cannot get to. Most especially the interior parts of the bones, at times it is used with the aid of a metal spatula. The spatula helps to push the metal sponge beyond places which the ordinary hand can do

ii. Scrubbing Brush

The scrubbing brush is employed for cleaning relatively smooth or accessible bone surfaces (Figure 69). Its medium bristle stiffness allows for efficient removal of residual organic matter such as connective tissues, gelatinous films, and traces of coagulated blood and oil without abrading or damaging the cortical layer of the bone.

Figure 79

Scrubbing Brush used for washing Bones Surfaces



Photo: Osiboye Oluwaseun. 2024

Figure 80

Washing the Skull surface with Scrubbing Brush



Photo: Josephine Igbekele. 2024

The mechanical action of scrubbing removes these soft biological remnants, ensuring a sanitized and visually clean surface. This stage of washing is essential in preventing organic decay and subsequent odour retention, thereby preparing the bone for further treatment or sculptural manipulation.

ii. Metal Brush

The metal brush is utilized for cleaning bone surfaces that require more critical attention, particularly where softer scrubbing materials prove inadequate. Due to its higher abrasive capacity, the metal brush provides effective mechanical action capable of detaching tenacious residues such as dried tissues, ligaments, and coagulated blood from the cortical surface of the bones.

Figure 81

Metal Brush used for washing difficult bone Surface



Photo: Oluwaseun Opeyemi, 2025

During application, moderate to firm pressure is exerted to ensure deeper surface penetration without causing structural damage to the osseous material. This process enhances surface purity and prevents microbial reactivation or the re-emergence of unpleasant odours resulting from decomposing organic remnants.

iv. **Metal Spatula:** The metal spatula, crafted from a quarter-inch steel rod approximately one (1) foot in length, was designed to serve dual functional purposes during the cleaning process (Figure 72). One end is tapered to a fine point resembling a toothpick and is used to remove residual plant matter, such as grass fragments, as well as compacted tissues and ligaments trapped between the teeth and crevices of the jawbones.

Figure 82

Metal Spatula



Photo: Osiboye Oluwaseun Opeyemi, 2025

The precision end of the metal spatula facilitated delicate mechanical cleaning without inflicting damage on the bone structure. Its opposite end functioned as an extension tool, allowing the researcher to direct the metal sponge into narrow or recessed areas of the skull that were otherwise inaccessible by hand. It was equally employed to detach fragile bone flakes within the nasal cavity that were unsuitable for further exploration. In some instances, the spatula was intentionally bent or reshaped to access irregular anatomical cavities, reflecting the researcher's improvisational response to material challenges. This adaptive approach enhanced both the efficiency and thoroughness of the cleaning process. In addition, 5.08cm nails and binding wires

measuring about 15.24 cm in length were improvised to remove debris from intricate areas of the skull, particularly around the teeth and joint sockets. These implements proved indispensable for dislodging stubborn residues such as tightly attached ligaments or remnants of undigested grass between the teeth and the jawbone. Thus demonstrating how functional improvisation and tactile sensitivity guided the researcher's engagement with the material.

Step 7: Rinsing of the Bones (I)

The rinsing of the bones marked an essential stage in the preparation process, aimed at removing residual dirt, gelatinous films, and traces of cleaning agents that might have remained after washing. This procedure is best when carried out under running water, allowing the researcher to physically inspect and handle each bone fragment.

Figure 83

Rinsing of Bones with Water after Washing with Detergent



Photo: Josephine Igbekele, 2024.

At this stage, the bones must be carefully examined to determine whether they have been adequately cleaned, particularly to ensure the complete removal of oil residues. If traces of oil or organic matter are still observed, the boiling process should be repeated to achieve thorough degreasing or de-fleshing. The efficiency of this process often depends on the type and nature of the animal bone involved. For example, camel bones generally require a longer duration of boiling compared to cow bones, due to their higher fat and oil content. Multiple rinsing of the bones (Figure 73 above) is subsequently performed to terminate any residual activity of the detergent solution, which could otherwise have adverse chemical effects on the bone structure. This stage also marks the researcher's confirmation that the cleaning and degreasing procedures have produced the desired result.

Stage 8: Soaking of the Bones inside Hydrogen Peroxide Solution (Human-Friendly Solution)

At this stage, the cleaned and well rinsed bones were soaked in an hydrogen peroxide solution to achieve both disinfection and whitening of the bones. Hydrogen peroxide was chosen for its human-friendly and non-corrosive properties compared to other bleaching agents such as chlorine-based solutions. The process served multiple purposes: sterilizing the bones, reducing odour, and enhancing their visual brightness without compromising the natural texture or dematerialisation the structure of the skull and skull fragment.

Figure 84a-b

Soaking of the Bones inside Hydrogen peroxide solution (Human Friendly Solution)



Photo: Josephine Igbekele., 2024.

In this study, however, the skull and skull-parts had already undergone preliminary treatments such as de-fleshing and degreasing, which exposed the bones to sufficient antibacterial and bleaching effects. It is therefore recommended that the bones be soaked only briefly preferably for a few minutes in a diluted, human-friendly hydrogen peroxide solution (3–6% concentration) instead of the industrial 30% formulation. A measured quantity of ten millilitres (approximately one standard tablespoon) of hydrogen peroxide was diluted in twenty litres of water to prepare the cleaning solution. This dilution ratio was specifically adopted to preserve the natural coloration of the bones while preventing excessive whitening or structural weakening.

Figure 85

The Skulls and Skull Fragments reacting to Hydrogen Peroxide Solution



Photo: Osiboye Oluwaseun Opeyemi, 2024

This milder solution effectively disinfects and brightens the bones while minimizing chemical stress that could cause brittleness or micro-fracturing. Short exposure to this lower-strength peroxide maintains both the aesthetic quality and structural integrity of the bones, making them safe for studio handling and long-term preservation.

Stage 9: Rinsing of the Bones (II)

The second rinsing is equally vital to the study because hydrogen peroxide is a strong oxidizing agent and slightly acidic in nature. After the treatment with hydrogen peroxide, the bones should be thoroughly rinsed preferably under a running tap two or three times. It is important to note that rinsing cannot be excessive but may be

insufficient if done hurriedly. Proper rinsing completely halts the chemical activity of the hydrogen peroxide, thereby preventing any gradual deterioration or dematerialization of the bones over time.

Step 10: Ethanol Solution Wash

The bones were also washed in an ethanol solution, as shown in (Figure 76). This procedure served as the final cleaning stage and significantly accelerated the drying process. The ethanol wash effectively reduced surface slipperiness, resulting in a firmer and more refined tactile quality of the bones. A water-diluted ethanol solution was prepared in a 1:5 ratio, meaning one litre of ethanol was mixed with five litres of water. This proportion ensured adequate disinfection while preventing excessive dehydration or surface whitening of the bone material.

Figure 86

Rinsing of Skulls and Skull parts (Bones) inside Ethanol Solution



Photo: Josephine Igbekele, 2024

During rinsing (Figure 76), speed and precision were essential because ethanol evaporates rapidly. The researcher wore a nose mask to avoid inhaling ethanol vapour. Compared to hydrogen peroxide, the ethanol solution proved milder on the bones and non-irritating to the skin. Furthermore, ethanol's dehydrating and sterilizing properties helped to halt any residual biological or chemical activity within the bones, thereby preventing potential de-materialisation and ensuring the material's structural stability for subsequent sculptural application. Ethanol was chosen because of its rapid evaporation rate, mild sterilizing effect, and chemical compatibility with organic materials such as bone. These are qualities that ensure effective cleaning without altering the structural integrity or natural texture of the material.

Step 11: Draining and Drying of Bones

After the ethanol wash, the bones were carefully arranged on a clean mesh tray to allow excess liquid to drain off naturally. They were left to air-dry in a well-ventilated space, away from direct sunlight, to prevent warping, cracking, or uneven dehydration. The drying phase was crucial in stabilizing the bones by removing residual moisture, which could otherwise promote mold growth or internal decay over time. The researcher monitored the process closely, ensuring that the bones achieved a balanced dryness suitable for handling and subsequent sculptural manipulation.

Figure 87

Draining and Drying of Bones (Cow Cranium, Upper Jawbone and Other Bone parts)



Photo: Osiboye Oluwaseun Opeyemi, 2024

Figure 88

Draining and Drying of Skull Fragments (Cow Upper Jawbone)



Photo: Osiboye Oluwaseun Opeyemi, 2024

Figure 89

Draining and Drying of Skull Fragments (Cow Lower Jawbone)



Photo: Osiboye Oluwaseun Opeyemi, 2024

This stage signifies the readiness of the skulls and skull fragments as unconventional sculptural media, marking the point at which studio exploration can effectively commence (Figure 77, 78 and 79). A completely dry bone is easier to handle, explore, and manipulate within the sculpture studio, as it responds more predictably to cutting/slicing, drilling, and joining processes. Moreover, dry bones are free from offensive odours since all traces of blood, marrow, flesh, ligaments, and oil have been eliminated through cleaning and preservation procedures.

Figure 90

Draining and Drying of the Camel and Cow Skull Aired and Stored in the Studio



Photo: Osiboye Oluwaseun Opeyemi, 2024

4.6 Comparative Advantages of the Boiling Technique over the Burying Technique in Bone Cleaning

Although both the boiling and burying techniques share some similar procedures, such as washing with detergent, treating with hydrogen peroxide, and rinsing with ethanol and even slight boiling of the bones at times, their processes and outcomes differ significantly. These differences make the boiling technique more effective and preferable for preparing skulls and skull fragments as sculptural media.

1. **Time Efficiency:** The burying technique of cleaning bones requires a considerably longer duration, typically extending beyond two months, to achieve satisfactory results. In contrast, the boiling technique takes only about two to three days following a three-week decomposition period, thus making it far more time-efficient for studio practice.
2. **Retention of Natural Bone Colour:** The burying method tends to distort the natural coloration of bones due to prolonged contact with soil, which permanently stains the bone surface even after washing with detergent and hydrogen peroxide. Conversely, the boiling method effectively preserves the bones' natural hue and aesthetic quality, making them more visually suitable for artistic manipulation.
3. **Safety and Preservation of Bones:** The safety of buried bones cannot always be guaranteed unless special measures are taken to secure them underground. There is a persistent risk of interference from scavenging animals such as dogs, jackals and fox, which may dig up the bones. The boiling technique, however, eliminates such risks since the process is conducted in a controlled studio or outdoor setting.
4. **Necessity of Secondary Treatment:** Even after the burying and washing processes, the bones often require additional boiling to remove residual fats and oils through degreasing. This makes the burying method less efficient, as the boiling stage becomes unavoidable for achieving optimal cleanliness and stability.

In summary, while both techniques achieve bone purification, the boiling technique proves more practical, efficient, and artistically reliable for preparing bones as sculptural media. Its controlled process ensures the preservation of the bones' natural colour, structural integrity, and hygienic safety. Consequently, the bones cleaned through

this method become immediately suitable for studio manipulation, marking the transition from material preparation to creative exploration

Studio Production Phase

Following the completion of the pre-studio production processes, namely the collection, cleaning, maceration, and preservation of skulls and components, the study advanced to the studio production phase. This phase constitutes the practical and creative application of the prepared bone materials as unconventional sculptural media. It involves the transformation of these biological remnants into expressive artistic forms through a range of techniques, including cutting, slicing, drilling, joining, and assemblage.

At this stage, emphasis is placed on exploring the aesthetic potential of the materials, as well as their symbolic, textural, and structural qualities. The process aligns with the broader objective of the study, which seeks to rethink the sculptural significance of organic materials within the context of contemporary African art practice. The studio production phase is exemplified through the creation of the artwork titled “*Societal Thieves*”, which serves as a case study for examining the processes, techniques, and conceptual considerations underpinning the transformation of bone materials into sculptural expression.

The Making of Societal Thieves

The production processes of the maquette and the final studio piece, *Societal Thieves*, exhibit notable similarities, with only deliberate variations introduced to accommodate the scale and additional compositional elements of the larger work. While the thematic essence remains consistent, the special project expands its visual and

structural scope. The artwork is a two panel board that each is approximately 60.96 cm × 487.68 cm, creating a spatial rhythm that emphasizes symmetry and visual balance. The first panel (Panel 1) has a single cluster of 4 upper jaw on vertically and horizontally sliced lower jaw of a cow including sliced teeth. The composition is further enhanced through the application of acrylic colours on the board, adding chromatic depth and reinforcing the expressive undertone of the work. While the second panel (Panel 2) has three clusters of 4 upper jaws on vertically and horizontally sliced lower jaw of a cow including sliced teeth.

4.7 Conceptualization of the Design

The conceptualization of the design for Societal Thieves began with the translation of the approved idea into visual and physical form through a systematic process that combined artistic intuition with technical precision. The following stages highlight the key procedures undertaken:

1. **Production of the Approved Sketch:** The initial stage involved developing and refining a detailed sketch that visually articulated the conceptual intent of the work. This served as the foundational blueprint for the subsequent phases of execution.
2. **Production of the Maquette:** The production of the maquette served as a preliminary exploration and structural experiment leading to the realization of the main studio project. The following processes were systematically undertaken:
 - i. A working board measuring approximately 60.96 cm × 121.92 cm (2 ft × 4 ft) was prepared as the base for the high-relief bone sculptural composition.

- ii. Identification and selection of specific parts, forms, and structures of skulls and skull fragments were carried out based on their aesthetic value, anatomical relevance, and compositional suitability.
- iii. Application of Colours (I): A preliminary coating of acrylic colours was applied on the board to establish a tonal foundation and background harmony.
- iv. Carving Techniques: The carving process involved a combination of slicing, cutting, drilling, engraving, and sandpapering to refine and prepare the bones for structural integration.
- v. Assembly and Installation: The processed bones were carefully pasted, mounted, and installed on the prepared board to achieve the desired spatial arrangement and visual rhythm.
- vi. Application of Colours (II): A second phase of colour application was executed directly on the bones and skull parts to accentuate form, texture, and contrast.
- vii. Framing: A custom wooden frame was constructed and securely fixed to the board, providing structural support and compositional completeness.
- viii. Finishing: The final stage involved meticulous surface treatment, cleaning, polishing, and sealing to enhance the aesthetic quality and durability of the work.

In conclusion, the maquette functioned as a crucial experimental platform that informed the compositional logic, technical strategies, and material behavior later adopted in the main project *Societal Thieves*. It enabled the artist to assess the visual

harmony of bone textures with acrylic pigments, refine spatial relationships, and determine the practical feasibility of large-scale bone integration in a relief format. Additionally, the use of metal components such as bolts, nuts, and washers provided mechanical stability and reinforced the assemblage, ensuring both structural integrity and aesthetic cohesion throughout the experimental process.

3. **Studio Production Phase for the Making of *Societal Thieves***

- i. **Production of Working Drawing and Scaling/Magnification** (Based on the approved sketch and intended installation dimensions and location, ensuring proportional accuracy and compositional balance.)
- ii. **Selection and Preparation of the Support Board** (Chosen board size: approximately 61 cm × 976 cm, divided into two panels of 61 cm × 244 cm each, suitable for the site-specific high-relief bone sculptural composition.)
- iii. **Identification and Selection of Camel and Cow Skulls and Skull Fragments** (Focused on structural integrity, aesthetic diversity, and symbolic alignment with the thematic concept.)
- iv. **Colour Application (I) on the Board** (To establish the base tone and visual rhythm that guide bone arrangement and enhance the underlying design.)
- v. **Carving Techniques** (Including slicing, carving, drilling, engraving, sandpapering, and controlled cutting, applied to refine the morphology of the skull and skull fragments where necessary and integrate them into the relief composition.)

- vi. **Mounting and Installation of the Bones on Board** (Executed through a combination of adhesive and mechanical attachment, utilizing metal bolts, nuts, and washers to ensure structural stability and durability.)
- vii. **Colour Application (II) on Bones** (Aimed at achieving tonal harmony, accentuating textures, and reinforcing symbolic emphasis within the overall composition.)
- viii. **Production and Assembly of the Metallic Frame** (Approximately 61 cm × 488 cm, fabricated to strengthen the sculptural composition and facilitate secure exhibition mounting.)

Stage 1: Production of Working Drawings and Scaling/Magnification

The transformation of a conceptual idea from thought into sketches constitutes the first step in the making of any artwork, and this research is not an exception. The process is termed ideation. According to Jonson (2005:613), ideation is referred to as a creative process of generating, developing, and communicating new ideas, where an idea is understood as a basic element of thought that can be either visual, concrete, or abstract. Graham and Bachmann (2004:15) state that ideation encompasses all stages of a thought cycle, from innovation to development to actualization. Similarly, Ecoma (2014) explains that art ideation, as a process of creating, can be experienced in terms of constructivism, in which students are active in making tangible objects. In this regard, ideas are constructed and acquired through exploring, testing, and playing around with materials. He concludes that through the constructivist process of manipulating materials, ideas are given physical shapes and forms as two- or three-dimensional objects.

The conceptual idea was brought to life because the researcher had engaged in a detailed study of the forms and parts of the camel and cow skulls both as complete structures and in fragments. This was done to the point of attaining cruise control through critical observation, thereby giving meaning and suggesting interpretations to the forms both in isolation and as a composition. Consequently, at the thought or mention of a theme, a figurative composition comes to mind; similarly, the sight of a camel or cow skull, whether whole or in parts stimulates creative visualisation. This mental composition is first realised through a series of exploratory sketches using the camel and cow skulls (in whole and in parts) as models. The forms obtained are then distorted or enhanced using modelling techniques within the sketch phase, relying on the draughtsmanship skills of the researcher while keeping the objectives of the study in focus.

Figure 91

Study Sketch for Special Projects “Societal Thieves”



Artist: Osiboye Oluwaseun Opeyemi, 2023

Stage 2: Selection and Preparation of the Support Board

Following the approval of the working drawing for the special sculpture project, a 122 cm × 244 cm marine grade plywood MDF (Medium Density Fiberboard) was purchased and slice horizontally into two equal panels, resulting in boards measuring

approximately 61 cm × 244 cm each. The measurement and proportional scaling of the work were carefully executed, with the researcher opting to retain the width of the maquette (61 cm) while extending the total length to 488 cm, maintaining a **1:4** ratio. Being a three-panel artwork, the total length of 488 cm was further divided into two panels of equal dimension (61 cm × 244 cm), thereby achieving a stretched and elongated visual effect lengthwise on the board.

Note on Material Selection:

In some local markets in Nigeria, suppliers and artisans informally say “MBF” or “Marine Board Fiber” when referring to Marine Plywood or MDF, especially when describing water-resistant boards.

A marine-grade plywood board was deliberately chosen for its superior dimensional stability, moisture resistance, and structural integrity. Marine plywood is manufactured from high-quality hardwood veneers bonded with waterproof phenolic resin, which prevents delamination even under humid or boiling water conditions (Fox, 2012). Its cross-laminated veneer structure and minimal voids enhance mechanical strength and durability, making it particularly suitable for sculptural works that demand both rigidity and surface adaptability in a controlled studio environment. These material properties ensure the stability of mounted bone fragments and the long-term preservation of surface finishes (Marine Plywood: What Makes It Ideal for Wet Environments, 2024).

Stage 3: Identification and Selection of Camel and Cow Skulls and Skull Parts needed for the Production of Artworks

Every animal has its own unique skeletal structure comprising of different bone formation most especially the skull. Archaeologist can differentiate one animal from the other through the use of bones. Mulhern (2014) opines that, ‘Archaeologists often make initial determinations about whether skeletal remains are human or not in the field. Then more detailed analyses often take place in the laboratory particularly for bulk bone recovered during excavation.

Osteologists study bones to identify their species, age, sex, and both pre- and post-mortem trauma, such as butchering. Again, Osteologist may work with complete specimens or only bone fragments. For the purpose of this study, the skull of camels and cows and their fragments were explored as an unconventional medium in sculpture..

Figure 92

Identified and Selected Camel Bone Skull and Jaw for the Study



Photo: Osiboye Oluwaseun Opeyemi, 2024

Figure 93

Identified and Selected Cow Skulls for the Study



Photo: Osiboye Oluwaseun Opeyemi, 2024.

Figure 94

Some Identified and Selected Cow Lower JawBone (Mandible) for the Study



Photo: Osiboye Oluwaseun Opeyemi, 2024.

Figure 95

Identified and Selected Cow Upper JawBone (Maxilla) for the Study



Photo: Osiboye Oluwaseun Opeyemi, 2024.

Figure 96

Identified and Selected Cow Cranium for the Study



Photo: Osiboye Oluwaseun Opeyemi, 2024.

Figure 97

The Researcher Identifying and Selecting some other fragments of the Cow Skull for the Study at Mayakan, Kano State Abatior.



Photo: Osiboye Dunamis IyanuOluwa, 2024.

Figure 98

Identified and Selected Camel Skull for the Study at Mayakan, Kano State Abatior.



Photo: Mojishola Osiboye, 2024.

The camel head (Figure 98) was intentionally purchased by the artist to maintain full control over the treatment process, ensuring that the skull remained undamaged, as preserving its natural form was a primary objective of the study. A similar approach was adopted for the cow head. The butcher was instructed to remove the flesh carefully without applying force or using heavy tools such as a machete, adze, or axe, which could distort or damage the natural structure of the skull. Instead, a small jack knife was used to gently remove the flesh to retain the skull's anatomical integrity.

Both animals share similar physiological structures and biological functions, although their skull formations and bone sizes differ slightly. It was observed that camel bones are generally larger and denser than those of the cow, whereas the cow skull is larger than that of the camel. For effective exploration of the skulls and their components, it is essential to identify the major structural parts that constitute a skull. Typically, a skull can be categorized into the following components:

- Cranium
- Upper Jaw Bone (Maxilla)
- Lower Jaw Bone (Mandible)
- Teeth
- Eye Socket (Orbit)
- Nasal Cavity (Nose Socket)
- Auditory Cavity (Ear Socket)

This stage practically involves the ability of the researcher to identify and select parts used for the composition of the sketch special projects and other compositions produced during the study among the clinically treated skull and skull fragments. As observed above the researcher has been able to gather camel skull and cow skull of

interest (Figure 92 and Figure 93). Also skull parts such as upper jaw bone of camel and cow (Figure 95) and lower jaw bone of cow (Figure 94) that were useful for the study. For example the composition of societal thieves is made up camel and cow skull fragments, cow upper jaw (maxilla), cow lower jaw (mandible), camel and cow teeth.

Stage 4: Colour Application (I) on the Board

To establish a base tone and visual rhythm that would guide the arrangement of bones on the 61 cm × 488 cm MDF board, the researcher employed acrylic paint using an unconventional painting approach inspired by hand block printing or stamping technique. This involved the physical use of the hand to collect mixed paint directly from the palette and apply it onto the MDF surface in a repeated patterned motion.

Figure 99a-b

Application of Red and Blue Acrylic Paint on Board



Photo: Angus Peter, 2025

The process began with the application of brilliant red, followed by blue (Figure 90a-b) and lemon green (Figure 91a-b) below. Other colours such as yellow pale (Figure 92a-b), yellow ochre, and titanium white were subsequently orchestrated across the

surface in a similar rhythmic pattern. These colours interwove and blended naturally, producing brilliant tonal transitions and spontaneous textures on the board.

Figures 100a-b

Application and the Mixture of Lemon Green on Board

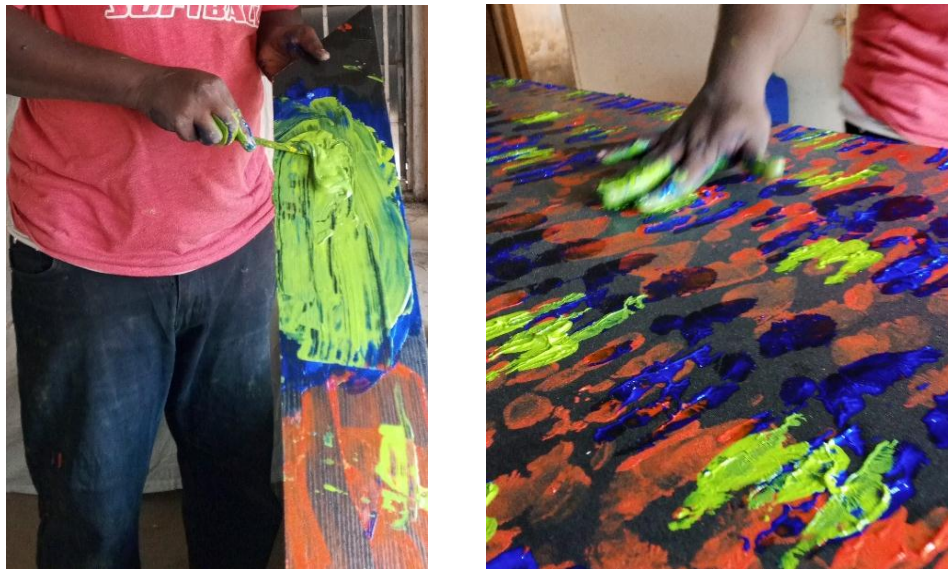


Photo: Angus Peter, 2025

Figure 101a-b

Application of Other Acrylic Colours on Board such as Yellow Pale, Yellow ochre and White

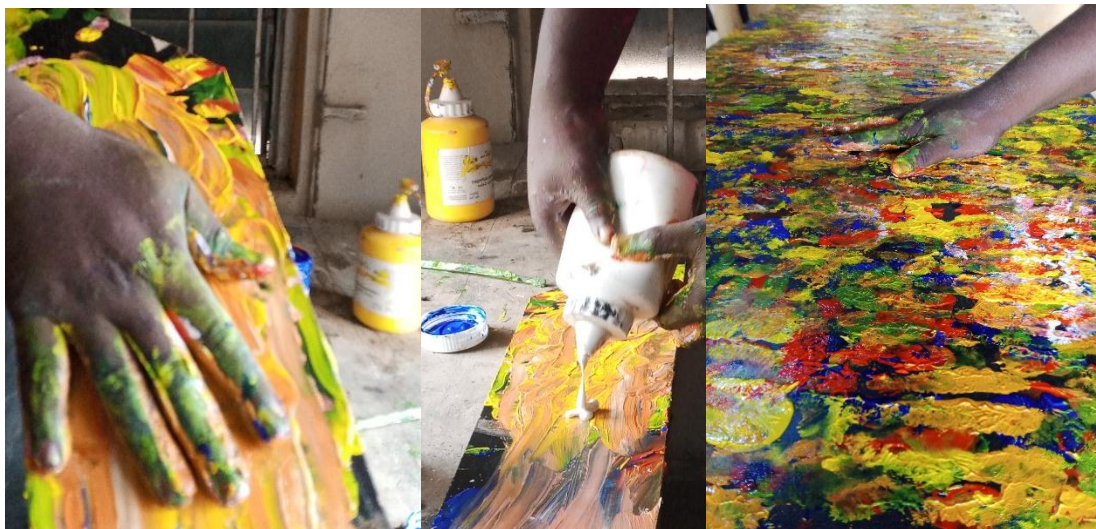


Photo: Angus Peters, 2025

This experimental method of painting evokes the expressive spontaneity of Jackson Pollock's action painting technique (Figure 93), where gesture and rhythm replace conventional brushwork to create a sense of movement and controlled randomness within the composition. Pollock's approach exemplifies a dynamic process of direct and instinctual engagement with materials, a quality similarly reflected in this phase of the production (Britannica, *Action Painting*, 2025).

Figure 102

Convergence



Artist: Jackson Pollock

Date: 1952

Source: <https://www.wikiart.org/en/paintings-by-style/action-painting#!#filterName=all-works,viewType=masonry>

Medium (2021) relayed that, Pollock was a real artist with real technical talent; he even painted quite realistically in the beginning. However, he changed course, choosing not to draw or paint in the traditional manner he was trained. Rather, he came up with his own brand-new method of painting.

Figure 103

Application of Other Acrylic Colours on Board such as Yellow Pale, Yellow ochre, White

**Photo:** Angus Peters, 2025

In the exploration of the unconventional method of painting (Figure 94 above), the vibrant acrylic colours generated a visually dynamic background for the bones, animating the board with an interplay of lively hues. Although the application process followed a rhythmic approach, the resulting composition appears intentionally un-rhythmic, an aesthetic decision that invites multiple positive interpretations such as abundance, vitality, fertility, wealth and productivity. This experimental process aligns with one of the study's key objectives: to create a mixed-media composition that integrates bones with acrylic pigments. By adopting this unconventional approach, the researcher established a rhythmic background that ensures the bones do not appear

isolated but rather visually embedded within the painted field. The outcome suggests a compelling visual compatibility between the bone structures and the acrylic colours, whereby the bone segments suggest the image of islands surrounded by vibrant colourful regions.

Stage 5: Modeling and Form Manipulation Techniques

The modeling and form manipulation of the bones were carried out using several techniques, including slicing, carving, drilling, engraving, sandpapering, and controlled cutting. These processes were applied to refine the morphology of the skulls and skull fragments where necessary, ensuring structural harmony and aesthetic balance within the high-relief composition. Each technique was employed with precision to modify, shape, and integrates the bone components seamlessly onto the prepared board, allowing both natural and artistically altered forms to coexist within the sculptural framework.

It is assumed at this stage that the bones (skulls) have been clinically treated, thoroughly dried, and adequately prepared for modeling and form manipulation through the process of up-cycling. The definition and description of the modeling and form manipulation techniques are presented as they occurred in this study, supported by practical examples and reflections drawn from the researcher's studio experience, and discussed alongside the equipment involved.

1. Slicing/Cutting

The slicing of the bones (skulls and skull parts) was carried out to observe and utilize the inherent natural designs or structural patterns embedded within the bones, particularly evident in the cow's lower jawbone (Figure 97). This process allowed the

researcher to expose and appreciate the internal morphology of the bones, thereby expanding their expressive potential in sculptural production. Slicing also enabled the attainment of desired forms and patterns, as well as the trimming and reshaping of skull fragments to fit specific compositional needs and artistic intentions. In this section, to properly articulate the slicing/cutting technique, the study reflects on its engagement with the cow's lower jawbone (Figure 97) as a representative example

Figure 104

The Researcher Slicing/Cutting Cow lower Jawbone (Mandible) vertically



Photo: John Anabui, 2025

Figure 105*Specimens of treated Cow Lower Jawbone***Photo:** Osiboye Oluwaseun Opeyemi, 2025

The cow's lower jawbone (Figure 96) above comes in two separate halves, unlike that of the camel, which exists as a single fused structure. It forms one of the key components of the skull, serving as the movable part of the cranial framework. Each half of the cow's lower jawbone contains the premolar and molar teeth, which play functional and aesthetic roles in both anatomical and artistic contexts.

The sliced sections (Figure 97a-e) revealed a variety of organic motifs and textural nuances that inspired further compositional arrangements. Through this process, the researcher observed that the inner structure of the jawbone possesses a rhythmic visual quality.

Figure 106

Forms and Patterns Achieved through the vertical Slicing/Cutting of Cow Lower Jawbones



Photo: Osiboye Oluwaseun Opeyemi, 2025

(Figure 97a) above shows a vertically sliced cow lower jawbone, featuring the sliced molar and premolar teeth firmly rooted within the bone structure, which enhances its uniqueness and aesthetic appeal.

Figure 107

Forms and Patterns Achieved through the horizontal Slicing/Cutting of Cow Lower Jawbones



Photo: Osiboye Oluwaseun Opeyemi, 2025

Figure 97b above is also uniquely distinct in its shapes and forms. Unlike the specimen in (Figure 97a), it lacks the teeth effect that was observed in figure (97a), giving it a different visual character. The researcher observed that these sliced pieces appeared slimmer and shorter compared to those in (Figure 97a), a variation resulting from the natural inconsistency in the cow's lower jawbone structure. Through vertical slicing of the upper part of the cow lower jawbone, the bones revealed diverse shapes and forms, each presenting its own sculptural potential and aesthetic rhythm. .

Figure 108



Photo: Osiboye Oluwaseun Opeyemi, 2025

The pieces in (Figure 97c above) was sliced from the same region the upper part of the cow's lower jawbone as the pieces shown in (Figure 97b). However, unlike the vertical cuts made in (Figure 97b), this pieces were horizontally sliced, resulting in an "L"-shaped form. This difference in slicing direction produced an entirely new range of

forms and patterns, further highlighting the versatility of the skull fragment's natural structure and the expressive possibilities it offers in sculptural composition

Figure 109

Bone Rings Sliced/Cut out of Cow Lower Jawbone



Photo: Osiboye Oluwaseun Opeyemi, 2025

Figure (97d) above presents forms and patterns that could almost create doubt about their origin from the cow's lower jawbone, as they appear as bone rings of varying sizes, patterns, and structures. These circular forms were actually obtained from the slender, rounded portion of the jawbone. The distinctive shapes emerged through

horizontal slicing of this specific area, revealing unexpected internal formations and textures that further enrich the visual diversity of the material

Figure 110

Offcut of Teeth in the Cow Lower Jawbone



Photo: Osiboye Oluwaseun Opeyemi, 2025

The pieces in (Figure 97e) above are a kind of composition showing the top portion of the teeth from the cow's lower jawbone. They carefully sliced-out form that suggests the crown of the teeth. This section was the hardest to achieve during slicing due to the density and toughness of the teeth. The slicing was carried out vertically, similar to the pieces in Figure (97a), which created a kind of fall-out impression for the teeth. The resulting fragments resemble small pieces of jewelry or polished stones. The cross-section of the teeth after slicing produced a dazzling visual effect enriched with natural hues of black, dark brown, and other subtle tones. These off-cut teeth fragments inspired

further creative exploration and offered new possibilities for artistic manipulation within the studio process

In summary, the forms and patterns discussed above were achieved through either horizontal or vertical slicing/cutting of the cow's lower jawbone. The pieces in (Figures 97 a, b, and e) were obtained through vertical slicing, while pieces in (Figures 97 c and d) resulted from horizontal slicing of the same cow skull part (lower jawbone) a fragment from the cow skull. Although some sliced pieces may appear similar, close observation during the study revealed that no two sliced bone or skull fragments were exactly alike.

The slicing and cutting techniques unveiled the hidden aesthetic potential of the cow's lower jawbone through its varied forms, textures, and natural color patterns. Each sliced skull fragment possessed its own visual rhythm and geometry form and structure, offering endless possibilities for compositional arrangement. Beyond revealing the internal beauty of the bone, this stage deepened the researcher's tactile engagement with materiality and enhanced creative sensitivity toward the sculptural potential of up-cycled organic matter.

2. Engraving

Engraving is the process of creating in-depth incisions on the surface of bones (Figure 100). It may take the form of lines, circular patterns, or abstract marks, depending on the artist's creative intention and the working tools employed. The main difference between the slicing/cutting technique and engraving lies in their depth and effect: while slicing or cutting opens and exposes the internal structure of the bone, engraving focuses on inscribing and embellishing the outer surface to enhance its aesthetic and expressive quality.

Figure 111

Using Electric Angle Grinder and a Metal Cutting Disc to Engrave on Bones Surface



Photo: Osiboye Oluwaseun Opeyemi

Figure 112

Patterns Engraved on Bones using Electric Angle Grinder and a Metal Cutting Disc



Photo: Osiboye Oluwaseun Opeyemi, 2019

During this study, engraving was predominantly executed using power tools, such as angle grinding machine and drilling machine fitted with different detachable

accessories such as metal cutting discs, metal grinding disc, burrs, hole saw, engraving bits and drilling bits. The detachable accessories are displayed along with the effect created on the bones. These attachments enabled controlled incision depths and textural variations on the bone surfaces. The use of power tools provided speed, precision, and consistency, allowing the artist to explore diverse rhythmic line patterns and textures that would have been more difficult to achieve manually.

The metal grinding disc is a circular attachment that closely resembles the metal cutting disc but is noticeably thicker and designed for heavier abrasion. It operates through a subtractive modeling process, removing material from the bone surface when attached to an angle grinding machine. This tool proved highly functional in the carving and surface refinement of bones, enabling the artist to achieve both broad material removal and controlled shaping. The metal grinding disc was particularly effective for smoothing uneven or coarse bone textures, exposing the natural tonal variations and patterns embedded within the material.

Below are the surface effects achieved on bone through the application of the metal grinding disc attached to the angle grinder.

Figure 113

Patterns carved out on Bones using Electric Angle Grinder Attach with a Metal Grinding Disc



Photo: Osiboye Oluwaseun Opeyemi, 2025

The metal hole saw can function both as an engraving and a cutting instrument, depending on the creative manipulation and intent of the artist. When connected to the drilling machine, it allows for diverse exploratory applications in bone modeling. The circular teeth object create distinctive ring-like or recessed patterns when used for engraving, and can also serve to bore or cut through bone surfaces with precision. Figures below illustrate instances where the metal hole saw was employed respectively as an engraving tool and as a cutting device, demonstrating its versatility in sculptural experimentation.

Figure 114

Circular Engraved Designs on a Camel Skull Through the Use of Metal Hole Saw



Photo: Osiboye Oluwaseun Opeyemi, 2025

Figure 115

Circular Sliced/Cut out Holes on a Camel Skull Through the Use of Metal Hole Saw



Photo: Osiboye Oluwaseun Opeyemi, 2025

The process of engraving demanded careful handling and concentration, as excessive pressure or prolonged grinding could generate heat and cause cracking or discoloration of the bone surface. Through systematic experimentation, the researcher developed an intuitive control over the tool movement, achieving both fine linear engravings and deep relief like textures that enhanced the visual rhythm of the composition.

As noted by Dormer (1993), the introduction of powered tools in craft and sculpture practice “expanded the artist’s tactile vocabulary, allowing for precision, speed, and surface refinement without compromising expressive intent.” This integration of

modern equipment into traditional material exploration aligns with the researcher's experimental process and material innovation.

3. Drilling:

Basically, in this study, the drilling effects and processes on skull and skull fragments were being carried out by the use of an electric drilling machine or a rechargeable cordless drilling machine. The difference between the two pieces of drilling equipment is just the source of the electromotive force.

It is carried out with the use of metal drills (Figure 109) of different sizes usually attached to a drilling machine. It is used to make different sizes of holes on surfaces such as bone, wood, and metal during the study.

Figure 116

Metal Drilling Bits.



Source: Retrieved from <https://images.app.goo.gl/pb5yiaHVDb4QQZWc>
November 27, 2025

Below also illustrates where the artist employed the use of holes to create visual forms and enhancement on the jaw bones.

Figure 117

Holes Made to Enhance Cow Jaw Bone through the use of a Drilling Machine



Title: Environmental Hazard

Medium: Lower Jaw Bone (Mandible)

Size: 2ft by 4ft

Date: 2024

Photo: Osiboye Oluwaseun Opeyemi, 2024

The holes made on the bones in the above relief artwork during the study were meant for aesthetic purpose and functional purpose. The holes were functional in the sense that, they also aid the passing through of metal objects or rings, such as screws, during installation, thus connecting two or more bones together.

4. Sanding

Smooth and rough sandpaper that are specially designed in a way that they have been attached to an electric grinding or drilling machine (Figure 98 and 102) in order to

achieve a more successful and fast result during the leveling of the bone surfaces and removal of stains created by the adhesive.

Figure 118

Circular Disc Rough sandpaper



Photo: Osiboye Oluwaseun Opeyemi, 2025

Figure 119

Rough and Smooth Sandpaper

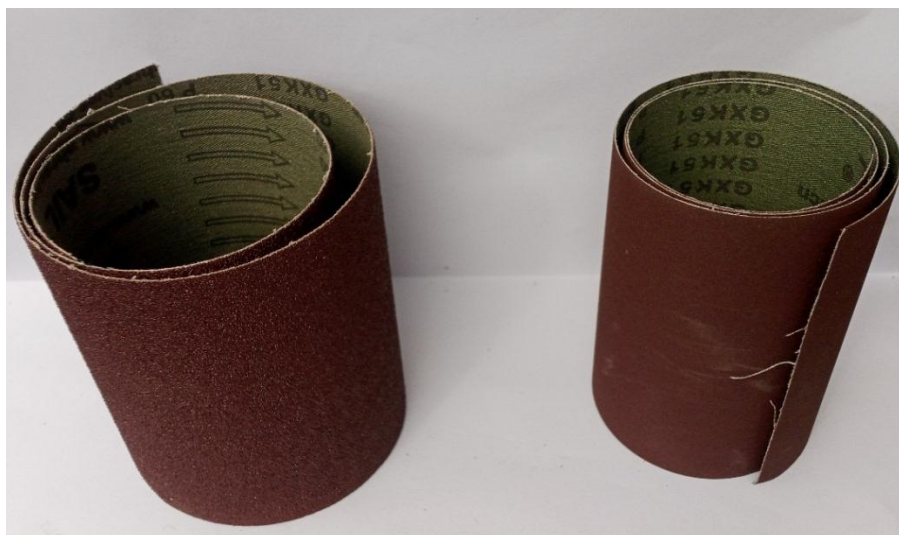


Photo: Osiboye Oluwaseun Opeyemi, 2025

This is not to say hand-sanding is not also engaged in during the production of the sculptural artworks. It was also used when working on intricate forms and places that needed a slow speed and consistency for the desired results (Figure 112). This is observed most especially while sculpting on intricate forms.

5. Assemblage:

Assemblage, in the context of this study, refers to the creative process of composing bones and other found materials into a unified sculptural statement. It involves the deliberate arrangement and integration of organic and synthetic elements, such as skull fragments, wires, pigments, and wooden boards, plastics to generate new aesthetic and conceptual meanings. Within this practice, assemblage functions as an act of material re-signification, transforming discarded or symbolic organic forms into renewed visual narratives. It embodies an ecological consciousness and a sculptural philosophy that values reconstruction, hybridity, and the poetic reinvention of matter. It is a three-dimensional art form created by combining and arranging different objects, materials, or forms to produce an entirely new form. In this study the material explored along with the bones are binding wire, metal: bolt, nut and washer, scrap metal and plastic. Observing the sculptural work, like “State of the Nation: Nigeria”, “Gbagyi Women” suggest a composition of two, three different materials juxtaposed together with a tittle to align the visual forms, structure to have a composite meaning.

Stage 7: Mounting and Installation of Bones on Board

The mounting and installation stage marked the transition from material preparation to the structural and compositional realization of the artwork. Each bone fragment after been modeled, manipulated and enhanced to desire forms and structure by

the researcher, was carefully positioned on the unconventionally painted board to achieve the researchers desired balanced, visual arrangement and conceptual coherence. This required thoughtful consideration of form, rhythm, and spatial relationships to ensure that each bone retained its distinct natural character while contributing meaningfully to the collective composition, a configuration already foretold through the Marquette.

Figure 120

Epoxy Adhesive “Araldite Gum”



Photo: Osiboye Oluwaseun Opeyemi, 2025

Figure 121

The Mixture and Application of Epoxy Adhesive (Araldite)



Photo: Osiboye Oluwaseun Opeyemi, 2025

Figure 122

Binding wire



Photo: Osiboye Oluwaseun Opeyemi, 2025

Figure 123

Bolts, Nuts, and Washers



Photo: Osiboye Oluwaseun Opeyemi, 2025

Figure 124

The Researcher Fastening the Bolts, Nuts, and Washers with the Skull Fragments (Cow Upper Jawbone)



Photo: Osiboye Oluwaseun Opeyemi, 2025

To secure the bones firmly to the board, a combination of industrial-grade epoxy adhesive “Araldite Gum” (Figure 113), binding wire (Figure 115) and mechanical fasteners such as bolts, nuts, and washers (Figure 116) was employed. The inclusion of bolts and washers was not merely for strength but also for precision alignment and aesthetic particularly in cases where heavier skull segments or protruding bone forms required stable anchorage. The washers served as protective buffers, preventing direct contact between the bone surface and the metal fasteners, thereby reducing stress and potential cracking. In several instances, holes were drilled through both the board and the bones to allow the insertion of the bolts, after which the nuts were tightened using spanner (Figure 117) below to achieve the desired tension. They were also carefully and thoughtfully inserted where they are visible for the purpose of aesthetic as well.

Figure 125

Spanners used in fasten the Bolt, Nuts and Washers to the Skull Fragments



Photo: Osiboye Oluwaseun Opeyemi, 2025

The integration of the bones onto the painted background established a visual unity where texture, colour, and form interacted fluidly. The bones appeared not as foreign objects imposed upon the board, but as an island growing out of a chromatic

environment. Thus, the installation embodied the study's central artistic goal: to recontextualize natural materials within a structured, yet expressive, mixed-media composition focusing on acrylic colours and metal (bolts, nuts and washers).

Stage 7: Colour Application (II) on Bones

The first colour application in this production was carried out on the board (Colour Application I), thus creating a background for the skull fragment. The colour application (II) created an attempt for colours to reflect on the bones surfaces. Thus creating a complete chromatic illumination on the bones and its environment. This second colour application on bone surfaces completely eradicate the assumed loneliness of the bones on board.

In this phase, the acrylic colours were applied using brushes, a more conventional painting method to achieve controlled coverage and subtle reflections on the bone surfaces. However, colour blending was avoided, allowing each hue to retain its distinct identity while responding naturally to the bone's textures and contours. This approach enhanced visual harmony between the organic forms and their surrounding colour field, enriching both the aesthetic depth and expressive unity of the composition.

Stage 8: Production and Fabrication of the Metallic Frame

The metallic frame measuring 61 cm × 488 cm was fabricated to provide both Structural boundary and aesthetic boundary for the mixed-media composition. The frame was constructed using four corner pipes of 1 inches by 3 inches, selected for their durability, ease of welding, and ability to hold the large board firmly without warping. Each metal piece was carefully measured, marked, and cut to the exact size before welding.

The welding process involved a series of measured joints, ensuring precise alignment and balance. Special attention was given to the corners to maintain right-angled accuracy and to create a clean linear outline. After welding, the joints were ground smooth using a metal grinding disc to remove sharp edges and achieve a neat finish.

The surface of the frame was then cleaned and coated with a matte black spray finish. This not only protected the metal from corrosion but also provided visual harmony with the painted board and metallic fittings such as bolts, nuts, and washers. The entire fabrication process demanded both technical precision and artistic sensitivity, ensuring that the frame did not dominate the composition but rather served as a unifying boundary between structure and expression.

Stage 9: Presentation of the Special Project “*Societal Thieves*”

Figure 126

Societal Thieves (Special Project)



Medium: Camel and Cow skull parts
 Dimensions: 121cm× 243cm (Panel 1 & 2)
 Artist: Osiboye Oluwaseun Opeyemi
 Year: 2025

Societal Thieves is a two-panel mixed-media relief sculpture measuring 61 cm × 244 cm per panel. Constructed from sliced, drilled, and bored fragments of camel and cow skulls specifically the cow lower jaw bone, camel upper jaw bone and metal scrap. The work combines both low and high-relief assemblage techniques to create a dynamic surface. The metal, colour and bone fragments are arranged in rhythmic sequences, demonstrating repetition, directional flow, and patterned variation formal strategies that align with the study's objective of generating rhythmic sculptural expressions from skull materials. Metal components and selective (unconventional) applications of acrylic paint further enrich the composition, positioning the work firmly within mixed-media practice and expanding the sculptural dialogue between organic and industrial materials.

Visually, the artwork draws upon the inherent structural and textural qualities of the skulls (cow lower jaw bone and camel upper jaw bone) to produce a layered aesthetic language. Vertically and horizontally sliced cow lower jawbones form the dominant ground of each panel, their linear arrangement evoking rigidity, strain, and deprivation. In contrast, clusters of camel upper-jaw fragments retaining their dentition occupy prominent positions across the panels: one on the first panel, and three on the second. Their placement establishes a deliberate hierarchy within the composition, suggesting gradations of power and influence. The visible metal bolts securing these fragments to the board not only function structurally but also serve as visual metaphors for technological sophistication, calculated control, and the systemic machinery that enables exploitation.

Conceptually, *Societal Thieves* presents a critical commentary on social and political corruption. The four camel jawbones symbolize predatory leadership figures the "thieves" whose greed is implied by the still intact dentition that is predominantly molars

and premolar, evoking consumption, extraction, and the devouring of collective resources. Their elevated positions contrast sharply with the densely arranged cow bone fragments, which represent the wider society. These bones, visually compressed and rhythmically ordered, convey a community constrained, starved, and pressured despite existing within an environment rich in natural and human resources. The colourful areas of acrylic paint allude to this abundance minerals, cultural wealth, and agricultural potential. Thus suggesting that the society suffers not from lack but from mismanagement and corrupt appropriation.

Evaluatively, the work succeeds as both an aesthetic and conceptual statement. The integration of bone fragments, metal bolts, and colour creates a powerful visual narrative that centred on inequality, exploitation, and systemic decay. The hierarchical arrangement of elements provides a clear symbolic structure, while the rhythmic composition reinforces the tension between order and oppression. Through its material choices and spatial organization, *Societal Thieves* articulates a compelling critique of leadership that thrives at the expense of its people, unveiling the moral contradictions and structural failures embedded within contemporary society.

Health and Challenges

At this juncture it is important to discuss health and challenges because contact with the bones are inevitable. The study attaches so much importance to health and safety such that precautionary measures were taken into consideration in order to ensure safety in the course of the study. For instance the use of safety hand gloves and goggles, the use of hydrogen peroxide for cleaning the skulls and skull fragments also served as an antibacterial treatment and disinfectant on the bones. The first challenge of the study has

to do with dealing with bacteria's and diseases that may be around the bones. According to, Baum (2008), it is inform that, "Zoonoses are infections that are spread from animals to humans. Most often, humans are "dead-end" hosts, meaning that there is no subsequent human-to-human transmission. He also informed that, "If one considers most of the emerging infections that were recognized at the end of the last century and the beginning of this century, they would fall into the category of zoonoses". In view of this, the researcher didn't just retrieve his bones from any random place or as a totally found object. Rather, the bones were retrieved from the government owned abattoirs in which safety health measures were considered before slaughtering the animals. The animals were quarantined before slaughtering for human consumption. According to Chand, Phool & Singh, Amit and Vishwakarma, Ramanuj and Singh, Chandan. (2017), Quarantine can be defined

"as a legal restriction on the movement of agricultural commodities for the purpose of exclusion, prevention or delay in the spread of plant pests and diseases in uninfected areas with a view to prevent accidental introduction of exotic pests, weeds and pathogens dangerous to the agriculture or environment of a country/region, and if introduced, to prevent their establishment and further spread".

This to an extent can guaranty some measure of safety. Nevertheless, some other health safety measures were also incorporated into the research. This is because some of the skull and skull parts were retrieved during the process of natural decomposition of the excess meat, fat, bone marrow and blood. This decomposition involves bacteria and maggots that help in the cleaning of the bones as well but the process is slow in the course of which a foul odour is released to the immediate surrounding or environment.

In view of this, the researcher and his research assistants made use of rubber gloves, aprons and nose masks while picking the bones at the abattoir. This was done to

reduce direct contact with the smelling bones. In addition, while working on the bones in the studio, a lot of measures were taken to safe guard the artist from the studio hazards most especially the hazards that could be peculiar to bone as a medium. Therefore the following gadgets were employed to bring about safety in the study. Leather Apron, Leather Gloves, Gas nose mask, Transparent or Clear Goggle, Studio Fan, Nylon Cap.

Figure 127

Display of a Fully Kitted Bone Carver



Photo: John Anabui, 2025

Studio Jacket:

The studio jacket (Blue) helps to protect the chest, stomach, genital area and the laps from direct contact with bone and bone dust. It also helps to reduce impact of

misplaced instrument, gadgets or equipment while on motion or at work due to its thickness. In addendum, the studio jacket has the ability to reduce the impact of fire or halt it entirely.

Leather Hand Gloves

Primarily, the hand gloves (Gray) are used to protect the hands from hazards thus helping the hands to reduce contact with the bone dust and to reduce or stop impact in the case of an industrial accident.

Gas Nose Mask

The gas nose mask is used to cover both nose and mouth while working on bones, most especially when grinding, slicing/cutting, drilling, engraving and sandpapering the bones because these activities generate so much dust and particles from the bones, which could end up settling in the lungs if inhaled and some other parts of the body.

Transparent/ Clear Goggle

The clear goggle is used to protect the eyes from particles and dust from the bones while carrying out explorative activities on the bones, activities such as grinding, slicing/cutting, drilling, engraving and sandpapering of the bones.

Figure 128

Studio Fan



Photo: Osiboye Oluwaseun Opeyemi, 2025

The fan is used to blow away dust and particles while working from the artist and its working environment thus making the artist's atmospheric environment safe and pure. It was improvised by making use of the domestic home standing fan.

Nylon Cap

It was also improvised for and it helps in protecting dust and particles from settling into the hair while work is going on. The dust can cause the hair to be plagued by dandruff if not protected.

CHAPTER FIVE

VISUAL ANALYSIS, PRESENTATION AND DISCUSSION OF RESULTS

This chapter deals with the analysis, visual presentation and influence of the research (Exploration of Bones as Medium of Expression in Sculpture). The descriptive method of analysis was made use of on some related studio productions using camel and cow skulls and their parts and analysis of the special project. According Barret (1994) in Egiolamhen, (2019) explains that, the analysis of artworks does not stop at the ‘description of artwork’. He also mention that, apart from stating the obvious, perceptive and personal insight are major ingredient in the analysis of works of art. He concludes that it involves higher level thinking, which include the ability to analyze, evaluate, and synthesize information and ideas. This method of analysis was used to describe and relate the principles of art and the elements of art as they applied in the artworks using a formalistic approach.

5.1 Visual Analysis of Related Studio Works

The segment deals with the visual analysis the preliminary works, precisely some studio exploratory activities executed in the course of this study. They were carried out to determine the flexibility and creative potential of camel and cow skulls and their fragments for sculptural compositions. The outputs falls into different series of which an artwork can falls into two or three different series. The classification is in accordance to the objectives of the study. The classification of the series are:

- Artworks that were out rightly produces from bone (skulls and skulls fragments).
- Mix-media artworks precisely metal and acrylic paint.
- Three dimensional sculptural artworks.

- Two dimensional sculptural artworks.
- Art works produced creating rhythm out of forms from skull parts

These works were conceptualized and subjected to studio exploration and the results were found to be exciting. These harvested works have contributed immensely to the aim and objectives of this study. The related objects were expressed in, representational and highly representational forms, both in the round and in relief sculptures. The visual analysis of the work was discussed in relation to the concept and the objectives of the study.

Figure 129

Motherhood Passion



Medium: Camel Jaw Bone and Cow Jaw Bone

Dimensions: 38cm × 22cm × 16cm

Year: 2024

Artist: Osiboye Oluwaseun Opeyemi

Motherhood Passion (Figure 122) is a sculpture in the round created in 2024. The artwork measures approximately 38cm × 22cm × 16cm and is created from an assemblage of camel and cow bones, specifically camel lower jawbones with teeth and cow lower jawbones, some with teeth and others without. Offcuts from camel bone are also integrated into the composition. Contributing to its tactile and visual complexity. It is created as a representational piece, the sculpture embodies the theme of love, care, and devotion associated with motherhood. The concept of “motherhood passion” encapsulates the deep emotional bond, nurturing instinct, and selfless dedication a mother shows toward her child.

The work was produced using a direct method of modeling, which preserved the natural chemical composition of the bones while manipulating their visible physical structures to achieve the desired forms. As with many sculptural processes, the piece originated from a preparatory sketch that guided the composition. The bones were joined using bolts, nuts and washers and araldite adhesive at strategic points to ensure stability in the work of art. Slicing/cutting techniques were employed to carve and refine the skull fragments into desired forms that collectively create a three-dimensional sculptural composition. The entire structure is mounted on a black-painted wooden base, which creates a strong visual contrast with the natural off-white tone of the bones. A central hole in the base allows the sculpture to be firmly screwed in place, ensuring stability and permanence characteristics in African sculpture.

The sculpture exhibits clear three-dimensional qualities height, length and breadth as a freestanding piece, can be viewed from multiple angles for full appreciation. Within the composition, the camel lower jawbone forms the dominant structure and is

symbolically interpreted as the mother figure. This larger element is stylized to suggest a seated posture, evoking a sense of calm and nurturing presence. The child figure is represented by a carved cow lower jawbone positioned affectionately on the mother's lap, reinforcing the intimate bond between both forms. Additional sliced jawbones are used to support and complement the child's figure, carefully bonded with Araldite to create a unified sculptural whole.

From the material and composition, *Motherhood Passion* has different meanings that suggest care, leadership, and resilience. The work captures the nurturing foundation that mothers provide, which shapes the early development and leadership qualities of children. The mother figure represents caring and cooperative leadership, showing that true leadership starts with compassion, guidance, and strength during difficult times. In this way, the sculpture rises above its materials and becomes a symbol of culture and positive social values.

In the leadership context, the mother is perceived as both a leader and a nurturer of the nation, guiding her people with empathy, patience, care, and wisdom. She embodies the essential attributes of authentic national leadership one founded on understanding, compassion, and moral integrity. This maternal model of leadership contrasts sharply with what is increasingly evident in the contemporary world, where governance is often propelled by self-interest rather than collective welfare. Within this comparative framework, the leader may be likened to the mother, while society assumes the role of the child. In genuine motherhood, the child's wellbeing is prioritized; decisions are shaped by empathy, responsibility, and a deep sense of moral duty. In

contrast, most leaders' thinks towards their personal gain and the interests of close associates, relatives, and allies frequently overshadow the broader good of the society.

Figure 130

Exodus



Medium: Cow Jaw Bone, Bone rings and Acrylic colour

Dimensions: 61 cm × 122 cm.

Year: 2024

Artist: Osiboye Oluwaseun Opeyemi

The artwork titled *Exodus* (Figure 123) is a mixed-media, two-dimensional surface low-relief sculptural piece created in 2024. The dimensions measure approximately 61 cm × 122 cm. The media include acrylic paint and animal bones, specifically cow lower jawbones and other skeletal components from both cow and camel.

The composition originated from a conceptual sketch, initially developed in a sketchpad before being carefully enlarged and transferred onto a dark brown board. A preliminary layer of acrylic paint was created on the surface to establish the mixed-media

foundation and enrich the visual composition, thereby reducing the sense of isolation between the bones and the painted background.

The selected bone materials consist mainly of pre-treated cow skull fragments such as the lower jawbones, femurs, and humeri, which were prepared for carving and assemblage. Using an angle grinder, the cow lower jawbones were carefully sliced and fixed onto designated sections of the board. Similarly, the femurs and humeri were sliced into bone rings and strategically positioned to complement the overall rhythm of the composition. The bones were adhered using Araldite adhesive to ensure both permanence and structural coherence.

The dark brown surface is embellish with an unconventional acrylic painting technique (Figure 124 below), visually suggesting a network of roads that symbolize various migratory routes and paths of human movement. The interplay of colours and interlacing lines evokes the diversity of human experiences and opportunities encountered in different environments. The sliced jawbones and bone rings serve as symbolic representations of people in motion, humans in transit navigating the complex journeys and uncertainties that define existence.

Figure 131*The Painted Board Suggesting Road Network*

Photo: Osiboye Oluwaseun Opeyemi, 2024

The low relief artwork *Exodus* presents a compelling visual metaphor for the struggle toward a so called “greener pasture” a phrase that reflects the quest for a better life. The artwork captures the desperation and resilience of youths and working-class individuals who runs away from unstable economic and political conditions in search of opportunities elsewhere.

The road like painted patterns serve as visual cues for various migratory journeys, some orderly, others uncertain thereby highlighting both potential and peril. The bone fragments, suggestive of human figures in motion, reinforce the theme of large-scale human movement.

However, the work challenges the assumption that every migratory journey leads to improvement. The artist emphasizes that not all pastures encountered are truly green. Many face unforeseen hardship, suffering, and even death. The journey can result in

unmet expectations, revealing that the so-called “greener pasture” is often a mirage. The use of colour coded imagery strengthens this conceptual expression:

- A reddish pasture implies danger, loss, or death experienced by those whose desperate attempts end in tragedy.
- A black pasture symbolizes the harsh realities of racial discrimination, where migrants become second-class citizens in foreign lands. Which will not have occurred to them in their own land
- An orange pasture suggests the distraction of superficial pleasures or fleeting opportunities that divert migrants from their original goals. Such material things, opposite sex, social life etcetera.
- A blue pasture evokes emotional entanglements or misguided romantic relationships that ultimately lead to heartbreak or stagnation.
- For others, the journey concludes in no pasture at all, but in homelessness, drug addiction, exploitation, or social isolation.

Ultimately, the artist invites the viewer to reflect on the deeper cost of displacement and the social systems that drive people to leave their homelands. *Exodus* functions as both a critique and a caution, challenging simplistic narratives about migration and illuminating the emotional and societal consequences that often remain unseen.

Rather than romanticizing migration, the artist presents it as a fraught, multidimensional experience, one that involves both hope and hardship. This realist tone lends the work a sense of urgency and relevance in contemporary global discourse on migration and displacement.

Figure: 132*Humility and Love***Medium:** Camel Jaw Bone**Dimensions:** 22cm × 38cm × 15cm**Artist:** Osiboye Oluwaseun Opeyemi**Year:** 2024**Description and Analysis**

The artwork titled *Humility and Love* (Figure 125) is a sculpture in the round, produced in 2025. It measures approximately 22cm × 38cm × 15cm and is composed off, two carefully selected and clinically treated camel lower jawbones (mandible). The bones are securely mounted with bolts at strategic points, which form an integral part of the composition. The piece is presented on a smooth black pedestal.

The jawbones are arranged in a posture symbolically representing marital intimacy, specifically a rear-entry position. This configuration is not intended for erotic emphasis but serves as a metaphorical framework to explore deeper meanings of humility, love, submission, and trust within the marital context. The surfaces of the jawbones are meticulously sandpapered using both coarse and fine grades, suggesting cleansing and preparation of reminiscent of ritual acts or deliberate gestures preceding intimacy.

Through this composition, the artist employs unconventional materials (camel lower jawbones) to express deeply personal, social, and philosophical ideas. The stylised bone forms, though abstracted, clearly evoke human interaction. The sculpture's use of bone, a skeletal element often associated with mortality, contrasts with its themes of vitality, love, and connection. This paradox underscores the idea that humility and love are enduring aspects of human experience. The black pedestal is reminiscent of a well-crafted orthopedic bed, adds further symbolism, which imply comfort, readiness, and mutual consent.

Humility and Love stands as a philosophical statement about marriage, intimacy, and societal expectations. By presenting a sexual posture as a sculptural metaphor, the artist challenges prevailing notions of submission within marriage. Particularly the view that female submission equates to weakness, inferiority, or ignorance. Instead, the work redefines submission as a conscious, dignified expression of love, trust, and emotional vulnerability.

In many cultures, especially patriarchal ones, marital submission is misinterpreted as subservience or passivity. This work reclaims that narrative, portraying submission as

a consensual and joyful exchange between equals. The artist emphasizes that while the posture places one partner physically above the other, it does not imply inequality in dignity or worth. Rather, it reflects a balance of mutual pleasure and respect. The sculpture ultimately reminds viewers that in a healthy marriage, humility and submission from either partner foster pleasure, harmony, and enduring emotional connection. It reframes physical intimacy as a sacred act grounded in compassion, mutual respect, and shared delight.

Figure 133

Environmental Hazard: Water Pollution



Medium: Cow Lower Jaw Bone and Teeth

Dimensions: 61cm × 122cm

Artist: Osiboye Oluwaseun Opeyemi

Year: 2024

Description and Analysis

The art piece titled "*Environmental Hazard: Water Pollution*" (Figure 126) is a low-relief sculpture executed in 2024. It measures 61cm × 122cm and is mounted on a

dark brown board. The primary materials include approximately twenty-eight pieces of clinically treated cow lower jawbones and teeth, with some teeth still attached while others are missing. The retained teeth were fixed permanently using araldite adhesive. Deliberately drilled holes punctuate the jawbones, allowing bolts, ring washers, and nuts to pass through, securing them firmly to the dark brown wooden board. These metal fittings serve both structural and aesthetic purposes, subtly enriching the visual rhythm and industrial undertone of the work.

The lower jawbones are arranged irregularly, forming an inconsistent rhythm across the surface of the dark brown board. Most of the incisor sections were cut off using an angle grinder, emphasizing deformation and decay. The bones were further manipulated through drilling, slicing, and extensive sandpapering using both coarse and fine grades, driven by an angle grinder, to achieve a smoothed finish and visual clarity. The final result is a tactile, bone-based relief that conveys a deep message about environmental degradation

This sculpture utilizes unconventional materials, specifically organic remnants of animal bones. It fused with mechanical elements like bolts, washers and nuts. The juxtaposition between organic decay (bones) and mechanical reinforcement (metal parts) emphasizes the intrusion of industrial activity into natural ecosystems, which is the bone of contention of low relief artwork. The irregular placement of the bones and deliberate omissions (such as missing teeth or fins) visually suggests imbalance, decay, and death. The dark tone of the background further intensifies the atmosphere of pollution and lifelessness.

“Environmental Hazard: Water Pollution” serves as a metaphorical and literal representation of the destructive effects of water pollution, particularly due to oil spills and toxic waste discharge into aquatic ecosystems, which common in the south-south area in Nigeria. The bones suggest dead fish, a direct consequence of polluted waters, with their hollow bellies and absence of fins symbolizing decay, suffering, and ecological loss. The cow jawbones become stand in for marine creatures, possibly emphasizing that pollution affects more than aquatic life. It extends to all ecosystems and ultimately to humanity itself.

Moreover, the exposed mechanical parts not only enhance the artwork’s composition but may also signify human negligence and mechanical abuse of the environment. The arrangement of these materials broken, scattered, and disfigured visually portrays the chaos and destruction caused by environmental irresponsibility.

This work is a strong example of eco-art, combining sculpture and environmental commentary through the innovative use of found organic material. It is conceptually rich, provocative, and layered with meaning. The craftsmanship is evident in the meticulous treatment of the bones and careful composition, while the symbolism is powerfully communicated through both visual and material choices. The sculptor’s decision to use real animal bones instead of fabricated models intensifies the realism and moral urgency of the theme. It challenges the viewer to confront the physicality of death caused by environmental abuse, rather than perceive pollution as an abstract concern.

Figure 134

Structure of Existence



Medium: Off Cuts of Different Skull Parts of both Camel and Cow

Dimensions: 46cm × 28cm × 25cm

Artist: Osiboye Oluwaseun Opeyemi

Year: 2024

Structure of Existence (Figure 127) is a sculpture in the round produced in 2024, with dimensions of 46 cm × 28 cm × 25 cm. The work is composed of camel and cow skull bones particularly off-cuts that would ordinarily be discarded during bone-carving processes.

Figure 135

Camel and Cow Skull Bone off Cuts



Photo: Osiboye Oluwaseun Opeyemi, 2025.

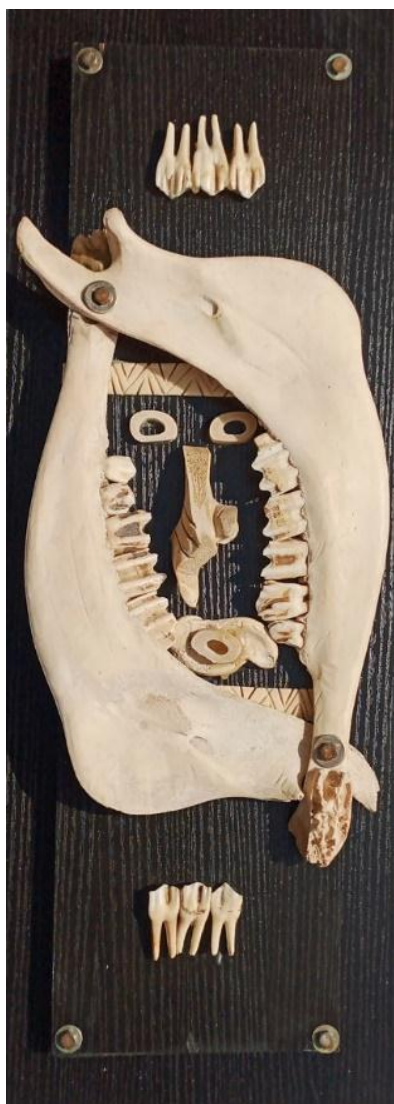
These offcuts were originally regarded as waste material (Figure 128 above), but the artist recognized their unique shapes, structures, forms, and natural unpredictability as valuable elements for sculptural construction. Although the individual bone pieces

seemed to suggest their own organic forms, they were further refined through the use of drilling machines, angle grinders, and sandpaper. Each fragment was thoughtfully selected and joined using araldite gum, in a slow setting, a deliberate manner guided by an underlying sketch. The process reveals a disciplined compositional rhythm one that reflect balance, patience, and structural harmony. The finishing was intentionally kept subtle, allowing the smoothened bone surfaces to retain their natural irregularities and organic character. This minimalist approach highlights the material's integrity rather than concealing it beneath artificial layers.

Formally and conceptually, the sculpture draws inspiration from the natural termite anthill, a remarkable architectural structure built by termites from soil, saliva, and organic matter. These mounds are intricate systems featuring ventilation channels, chambers, and tunnels that sustain entire colonies. As Udousung and Umoh (2022) note, "Anthills are formed by termites and other soil organisms; they gather woody materials, forage for honeydew, insect prey, and other resources to sustain their colonies." Beyond their biological significance, anthills embody social and spiritual symbolism in many African traditions. According to Huis (2017), they are often regarded as sacred spaces, believed to be inhabited by spirits, ancestors, or deities and are also indicators of fertile or mineral-rich soil, making them ecologically and economically relevant.

This sculpture employs a creative and sustainable use of found materials, particularly bone fragments that would otherwise be discarded. The choice to work with unpredictable and irregular off-cuts reflects an adaptive sculptural process, one that mirrors the very behavior of termites, creatures that repurpose organic materials to construct complex, efficient systems. The use of araldite gum as a bonding agent applied

in a slow setting, deliberate sequence mirrors the incremental construction method of termite colonies. Texturally, the artist retains much of the natural surface character of the bone, allowing the viewer to see both the raw and refined aspects of the material. The minimalist finishing with sandpaper reflects a respect for the material's original form and a desire to maintain visual authenticity, rather than obscuring the bone's organic origins. The Termite Anthill (*Structure of Existence*) can be imply as a symbol of adaptability, change, and the hidden worth found in simple things (Off Cuts). The repurposing of discarded bone fragments becomes a visual and symbolic act of elevation (from waste to wonder). Just as termites utilize the simplest of substances to build a strong and sophisticated structures, the artist uses overlooked materials to create a sculpture that embodies resilience, community, and purposeful design. The bone sculptural artwork does not aim to downplay the threat posed by termites to humankind despite their great architectural display. Instead, the study seeks to inspire the audience by highlighting the admirable social characteristics of termite colonies, including their preservation instincts, security measures, division of labour, orderliness, and respect for protocols as observed by Wilson (1971). This justifies the proverb, "Go to the ants, you sluggard; learn from its ways."

Figure 136*Hidden Face (Mask)***Medium:** Metal, Teeth, Cow Lower Jaw Bone & Other Bone Parts**Dimensions:** 26cm ×71cm**Artist:** Osiboye Oluwaseun Opeyemi**Year:** 2024

The artwork titled *Hidden Face* above is a low-relief sculpture created in 2025. Measuring 26cm ×71cm, it is composed of mixed media animal bones (including cow teeth and lower jawbones) and metal components such as bolts, washers, and nuts, all mounted on a rectangular wooden board. The sculpture presents a mask like composition

made from two layered dark brown boards. These boards are separated by metallic bolts placed at the corners though conceive, creating a narrow space that adds depth, shadow, and a sense of elevation to relief mask.

At the center lies the “hidden face,” formed by two cow jawbones joined together to produce an oblong structure that partially conceals the (Hidden Face) surface beneath. This structure acts as both the visual and conceptual focal point of the low relief bone sculptural artwork. Cow teeth are arranged symmetrically above and below the oblong form thus claiming more spatial space for the artwork and emphasize more on the oblong intention of the artist, despite not defying balance and rhythm, most especially rhythm that is structurally part of the objective of the study.

The artist’s deliberate use of bolts, nuts, and washers not only serves a functional role but also contributes to the aesthetic character of the mask. The double-board technique deepens the spatial perception, making the mask appear suspended or hovering, as though separating two worlds the visible and the concealed.

Symbolically, *Hidden Face* explores ideas of disguise, protection, and suppressed identity/value. The partially veiled structure suggests the effort to obscure or safeguard the self-recalling African masking traditions where masks are used for transformation, anonymity, and spiritual engagement. In this interpretation, the work comments on the layered realities of identity in a contemporary African context, where individuals navigate between inherited cultural values (hidden faces) and imposed modern pressures.

The contrast of materials gives the artwork and artist psychological weight. The bones suggest memory, ancestry, and nature, while the metal conveys force, modernity, and control created before independence by the colonial. The mirrored placement of cow

teeth at the top and bottom introduces visual harmony as a result of repetition brought out of rhythm.

In conclusion, *Hidden Face* imply a thoughtful dialogue between tradition and modernity through its fusion of organic bone and industrial metal. The sculpture reflects themes of concealment, identity, and resilience, inviting reflection on how individuals and cultures navigate visibility and transformation. Its material and symbolic contrasts ultimately affirm the enduring strength of African identity within changing social realities.

Figure 137

Ship of the Desert



Medium: Camel skull and Other Parts of the Camel Bones
 Dimensions: 16cm × 37cm × 69cm
 Artist: Osiboye Oluwaseun Opeyemi
 Year: 2024

The artwork titled *Ship of the Desert* (Figure 132) is a mixed-media sculpture created in 2025, measuring approximately 20cm in height, 60cm in length, and 16cm in breadth. It is composed primarily of camel bones, acrylic paint, and conceived bolts, nuts, and washers. The central figure is a natural camel skull, rendered realistically and placed on a base crafted from sliced and engraved camel bone pieces. The skull is securely mounted on a flat board and enclosed within a glass case, giving the work a formal and sacred appearance.

The base resembles a mat or ceremonial platform, composed of bone rings and bone flat bars that have been sanded and shaped to form a patterned surface. This rhythmic arrangement establishes order and symmetry around the central skull, suggesting reverence and ritual structure. The application of acrylic colour to the skull's upper teeth introduces a subtle layer of aesthetic enhancement. The use of glass to enclose the composition further reinforces its sense of preservation, as though the artist seeks to protect and memorialize the subject.

Conceptually, *Ship of the Desert* can be understood as an artistic tribute to the camel, an animal long associated with endurance, service, and dignity in desert life. Locally, the camel is also valued for its by-products such as milk and urine, which are believed to have healing properties. Within this context, the camel skull serves as a metaphor for resilience and adaptation in harsh environments. Its placement on a mat-like bone platform evokes a sense of reverence and royalty, elevating the animal to a symbol of strength, perseverance, and cultural pride.

Overall, "*Ship of the Desert*" exemplifies the fusion of natural materiality and conceptual depth in contemporary African sculpture. Through its careful construction,

symbolic structure, and thoughtful presentation, the work speaks quietly yet powerfully about endurance, reverence, and the necessity of cultural preservation in an evolving world.

Figure 138

Things Fall Apart



Medium: Cow Cranium, Cow Upper and Lower Jaw Bone
and Other Parts of Bone

Dimensions: 61 cm × 122 cm

Artist: Osiboye Oluwaseun Opeyemi

Year: 2024

Description and Analysis

“Things Fall apart” (2024) is a high-relief bone sculpture measuring 61 cm × 122 cm, inspired by Chinua Achebe’s classic novel of the same title. Achebe’s narrative portrays the tragic story of Okonkwo, an Igbo leader whose world collapses under British colonial intrusion. As Njoku (n.d.) affirms, the novel powerfully asserts African humanity, civilization, and complexity, countering earlier colonial misrepresentations while exposing the disruptive impact of imperial rule on traditional society.

The sculpture translates these literary themes into a visual and material composition. Built primarily from cow bones (cranium, jawbones, teeth, and skeletal fragments) the work forms a symbolic fabric marked by deliberate tears and a damaged zipper. This “fabric,” made of engraved and sliced flat bones, is carefully arranged to resemble woven material. The torn sections, shaped from bone rings cut from femurs. At the centre, a dysfunctional zipper made from cow jawbones and teeth, with a cranium shaped zipper head, becomes the focal symbol of rupture. Traditionally, a zipper brings together (unites), but here it fails signifying colonial imposition and the disintegration of a once cohesive culture.

The bone fabric is bonded with araldite gum, while the zipper is bonded with metallic fasteners (bolts, nuts, and washers). The engraved patterns on the flat bones and drilled marks on the skull are not merely ornamental; they function as visual traces of history, evoking trauma and endurance. These inscribed details act like scars, evidence of colonial impact that left both physical and psychological marks on African societies.

Conceptually, the bone fabric represents the interwoven nature of African society, communal, resilient, and connectivity, while the torn spaces signify social and moral

decay brought by foreign intrusion. The spoilt zipper head, made from the cow's cranium, becomes a striking metaphor for failed leadership and disempowered authority, announcing Okonkwo's tragic downfall.

In essence, "Things Fall Apart" stands as a sculptural metaphor for cultural fracture and resilience. Its combination of organic and mechanical forms captures the psychological and historical weight of colonization. By transforming bone into a visual language of disintegration and survival, the artist bridges literature and materiality, giving tangible presence to Achebe's narrative of a society torn yet enduring.

Figure 139

Awon Amuludun (Melody Makers)



Medium: Cow Lower Jaw Bones and Other Parts of Bone
Dimensions: 23cm × 13cm × 9cm
Artist: Osiboye Oluwaseun Opeyemi
Year: 2024

The sculpture titled *Awon Amuludun* (translated as *The Entertainers*) was produced in 2024 and measures approximately 23 cm in height, 13 cm in length and 9 cm

in breadth. It is a sculpture in the round, made entirely from animal bones, specifically cow lower jawbones (mandibles) a cow skull fragment. The artist employed slicing/cutting and sandpapering techniques to shape and modeled the three stylized figures: two male drummers and a female dancer. The composition is mounted on a black pedestal with the dimension 18cm × 15.5cm × 8cm, which visually anchors the piece and heightens its formal presence. The bright white tone of the bone figures against the black base enhances visual contrast, directing focus toward the rhythm and vitality of the dancers.

The figures are arranged in a sequential formation, the dancer leads in front, followed by two drummers positioned behind her but focusing on her reaction to the sounds of their drum. In response and in turns she reacts vigorously to every musical sounds that comes out of the drums, evoking a communal performance typical of traditional African celebrations. Despite their simplified forms, the figures convey movement and energy through subtle gestures and body orientation that result from vigorous training, which also implies that adequate practice gives birth to perfection. The curved surfaces of the mandibles are skillfully adapted to depict limbs and torsos, hips allowing the bone's natural form to determine part of the composition's rhythm and balance.

Through the interaction of material and design, the work captures the spirit of an entertainer's deep desire to awaken joy and excitement in the audience. The dancer herself is not in motion, yet the rhythmic posture of the drummers and the overall composition of the sculpture create an illusion of movement and even of audible rhythm. It appears as though the female dancer and the drummers are animated, even though they remain physically immobilized. Each figure, though distinct, contributes to the unity of the group, emphasizing harmony and participation rather than individual dominance.

Symbolically, *Awon Amuludun* represents the enduring role of entertainment as a vital part of human existence. It acknowledges the communal and therapeutic power of performance, connecting traditional practices of drumming and dancing with the broader evolution of entertainment into modern forms such as music, film, and social media. In essence, *Awon Amuludun* transcends its physical form to convey both cultural memory and contemporary relevance. It celebrates entertainment not merely as leisure but as a unifying social force that preserves heritage, expresses emotion, and sustains communal harmony.

Figure 140

Grazing



Medium: Cow Skull, Camel and Cow Bone Rings and Metals
 Dimensions: 122 cm × 244 cm
 Artist: Osiboye Oluwaseun Opeyemi
 Year: 2024

The mixed-media high-relief sculpture titled *Grazing* (Figure 135), produced in 2024, and measures approximately 122 cm by 244 cm. The work is composed mainly of

animal bones, with touches of metallic elements that add texture and visual depth. At the center of the composition is a clinically treated cow skull engraved with linear patterns and drilled holes, giving it a sense of intricate craftsmanship. Two large horns, sourced from Niger, a West African country, extend outward from the skull and are firmly fastened to both the skull and the black-painted background using binding wire, bolts, nuts, and washers.

Midway along each horn, a decorative chain made from alternating bone and metal rings gracefully drops and dangles across the composition, introducing elegance and ceremonial symbolism. The chain, positioned with deliberate symmetry, enhances the visual rhythm and focal strength of the artwork.

The background is composed of stylized, faintly visible cow heads constructed from sliced flat bone rings. These less prominent forms suggest a larger community presence, contrasting the central skull's dominance. The entire background is filled with carefully sliced and treated bone rings from cow and camel bones, arranged with Araldite gum on the black-painted board. This dense arrangement creates both a tactile surface and a conceptual landscape reminiscent of nucleated and dispersed settlements.

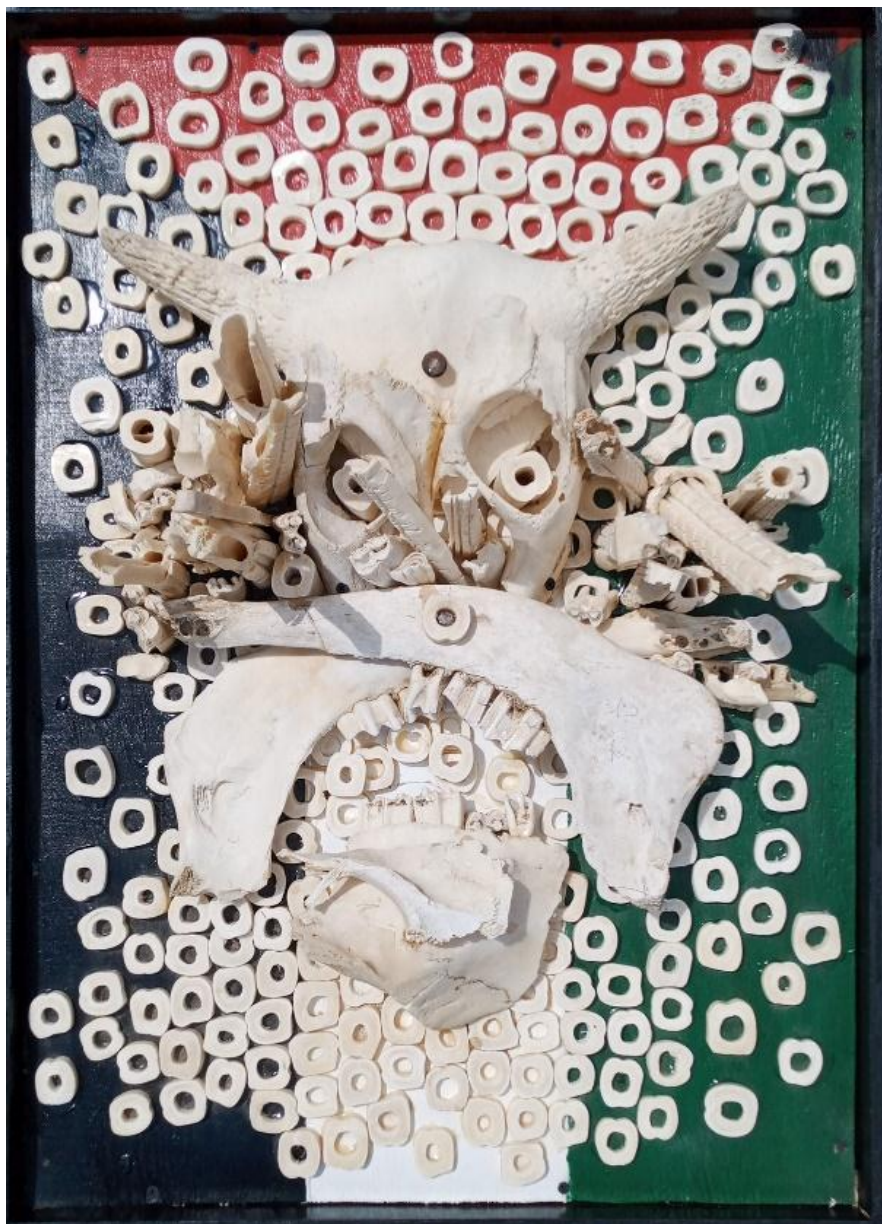
Through this textural layering, *Grazing* evokes a sense of social structure but imbalance. The central, decorated skull commands attention, while the subdued, fragmented cow heads in the background represent a group of people that is visually and symbolically marginalized. The interplay between the dominant figure and the dispersed forms mirrors societal hierarchies, where power is concentrated in the hands of a few.

In its material and compositional structure, the sculpture transforms organic matter into a social metaphor. The bones, once symbols of life, are recontextualized as

agents of critique reflecting issues of corruption, nepotism, mismanagement, and the uneven sharing of collective wealth. Overall, *Grazing* captures a deep commentary on socio-political imbalance. The central skull becomes a metaphor for leadership elevated and adorned while the dispersed bone forms embody the silent majority. Through its commanding scale, technical precision, and symbolic layering, the artwork presents a striking reflection on the concentration of power and the inequities that define human societies. It invites viewers to question authority, justice, and the ethical responsibility of leadership in a world where abundance exists alongside deprivation.

Figure 141

State of the Nation: Gaza



Medium: Cow Cranium, Cow Lower and Upper Jaw Bone,
Teeth, Cow Eye Sockets, Other Bone Parts
Artist: Osiboye Oluwaseun Opeyemi
Year: 2024

“State of the Nation: Gaza” is a politically powerful sculpture that reflects the harsh realities of life in a conflict ridden territory. Using skull fragments and other bone

materials such as cow cranium, upper and lower jawbones, teeth, eye sockets, and related parts, the artist constructs a symbolic composition that reflects destruction, loss, and resistance. The title automatically evokes awareness of the suffering experienced by the people in Gaza.

The inclusion of the Palestinian flag in the background situates the work within a specific political context, serving as a solemn reminder that Gaza remains under siege and its inhabitants continue to endure pain and displacement. The bone material, inherently linked to mortality and fragility, reinforces the tragic human cost of war. Through its fragmented forms and symbolic imagery, the sculpture transforms materials associated with death into a visual language of protest and resilience.

The contrast between the organic texture of bone and the symbolic strength of the flag amplifies the emotional tone of the piece. It calls for empathy and moral reflection, urging viewers to confront the realities of violence and human suffering. More than a visual statement, *State of the Nation: Gaza* stands as a moral outcry, an artistic testimony that combines aesthetic power with deep ethical resonance.

Figure 142*State of the Nation: Nigeria***Medium:** Camel & Cow Off cuts, Plastic bottle tops and Metal Scraps**Dimensions:** 48cm × 35cm × 25cm**Artist:** Osiboye Oluwaseun Opeyemi**Year:** 2024

The artwork titled *State of the Nation: Nigeria* is a sculpture in the round, created in 2025. Measuring 48 cm × 35 cm × 25 cm, it is a mixed-media composition made from bone offcuts from camel and cow skulls, plastic bottle caps collected from food cartons, and metal scraps retrieved from automobile repairers, including parts from bicycles, motorcycles, and tricycles.

At the centre of the composition is a weary-looking male figure in shorts, with a towel draped around his neck, suggesting exhaustion, as he struggles to push a heavily loaded wheelbarrow. The items in the wheelbarrow are constructed from bone fragments and colourful plastic bottle caps, while the male figure and wheelbarrow are made from

assorted metal scraps. The work employs diverse modelling and joining techniques, pasting, tying, cutting, slicing, grinding, and welding reflecting the improvisation required when working with varied materials. The vivid palette of red, black, blue, yellow, white, and green inside the wheelbarrow provides visual contrast against the silent tones of the metal and bone.

The sculpture depicts a typical wheelbarrow pusher, an informal metal scrap dealer often seen navigating the streets of Nigerian cities such as Benin and Kano. These individuals function both as street hawkers and retailers, engaging in the buying and selling of condemned iron. Their street calls of “Condemn iron! and the bang of two different metal surface” to gain the attention of their customer form a rhythmic chorus familiar in urban environments. Symbolically, the artwork reflects the resilience and industrious spirit of ordinary Nigerians surviving within a harsh socio-economic climate. The use of discarded materials becomes a metaphor for recycling human endurance and reconstructing hope from societal waste. The weary figure’s posture and the burdened wheelbarrow evoke not only physical exhaustion but also the moral and emotional weight of national hardship. Through this piece, the artist mirrors the country’s condition, a nation where survival is a daily act of endurance, and creativity emerges from scarcity.

Figure 143

Plastic cover used for the Mixed-Media



Photo: Osiboye Oluwaseun Opeyemi

The central figure, visibly a tired man pushing a wheelbarrow overloaded with non-metallic waste implies hardship and relentless struggle. The towel around his neck suggests fatigue and symbolizes the heavy burden carried not just physically but metaphorically by the average Nigerian hustler. Inspired by the artist's observation of street scrap dealers in Benin City between 2018 and 2019, the piece contrasts past vibrancy with present despair. In earlier years, wheelbarrows were filled with valuable metal scraps, accompanied by rhythmic street calls that conveyed confidence and purpose of the service rendered. In contrast, the 2024 depiction shows the wheelbarrow filled with Styrofoam, plastic bottles, broken glass, and worn-out containers, thus materials of little or no economic value. Highlighting the decline in resource availability and economic opportunity.

The combination of bones, metal scraps, and plastic bottle caps reinforces this symbolism. Bones from camel and cow skulls suggest scarcity, death, and decay, while the replacement of metal scraps with plastic waste represents diminished value and worth. The colourful bottle caps introduce deceptive liveliness, what might be called “suffering and smiling”, symbolizing superficial hope amid hardship. The mixed-media technique itself reflects resilience and adaptation: pasting, tying, slicing, and welding embody the inventive coping strategies of ordinary Nigerians confronting economic challenges.

The narrative is further strengthened by an actual conversation with a condemned iron seller, who explained that the nation’s economic situation now dictates what traders can buy or sell. People who once freely gave away condemned metal now hoard it, waiting for better offers. His statement, “*It is the state of the nation that determines what we can afford, not what we want*” summarizes the social reality that the sculpture captures: survival now overshadows community and fairness.

In essence, *State of the Nation: Nigeria* is more than a literal depiction of a street hawker; it is a symbolic portrait of a nation in distress. The common man is weighed down by economic realities, pushing forward with less value, less voice, and more burden. The once-energetic cry of “Condemn iron!” often accompanied by the bang of two metal surfaces to create a functional sound of trade identity, has transformed into a cry for help. The sculpture thus succeeds not only as an artistic composition but also as a social document, visually narrating the frustration of the working class and the degradation of economic dignity. Each material bone, metal, and plastic serves a deliberate symbolic purpose, representing exhaustion, disposability, and lost value.

Technically, the sculpture displays a high level of craftsmanship and adaptive creativity. The artist's improvisational process becomes a metaphor for survival in adversity, echoing broader socio-political concerns. The wheelbarrow stands not only as a tool of labour but as a vessel bearing the nation's collective burden. Ultimately, the artwork challenges viewers to reflect on the state of Nigeria its struggles, resilience, and the fragile hope that persists amid decay.

Comparative Study: State of the Nation: Nigeria and State of the Nation: Gaza

1. Both *State of the Nation: Nigeria* and *State of the Nation: Gaza* are socially engaged sculptures exploring human suffering, endurance, and resilience through bones and found materials. Though rooted in different contexts economic collapse and violent conflict they both portray ordinary people burdened by forces beyond their control. Each transforms discarded materials into a visual testimony of humanity's struggle and survival.
2. Both sculptures use mixed media to depict decay and resilience. *State of the Nation: Nigeria* blends bones, plastics, and metal scraps to symbolize survival amid economic hardship, while *State of the Nation: Gaza* employs only bones to evoke destruction, death, and resistance. The former reflects endurance through material contrast; the latter embodies the starkness of wartime loss.
3. Conceptually, *State of the Nation: Nigeria* critiques poverty and stagnation through a weary figure pushing worthless waste. Its bright bottle caps masking despair with deceptive liveliness, echoing Fela Anikulapo-Kuti's notion of "suffering and smiling." In contrast, *State of the Nation: Gaza* protests global

injustice, using the Palestinian flag and bare bones to signify purity, fragility, and lives lost to violence.

4. Symbolically, both works meditate on human fragility. In *State of the Nation: Nigeria*, bones mixed with plastic and metal suggest endurance within decay, while in *Gaza*, bone alone stands as a stark emblem of mortality and resistance. Together, they function as visual lamentations. One for a dying economy, the other for a wounded humanity.
5. Technically, both sculptures reveal the artist's mastery of assemblage and modeling to evoke emotion through material. *State of the Nation: Nigeria* employs tying, cutting, and welding to express improvisational struggle, while *State of the Nation: Gaza* uses the precise arrangement of bones to convey solemn stillness through the use of araldite adhesive. The dialogue between motion and stillness, improvisation and precision, defines their emotional and structural tension.
6. Emotionally, *State of the Nation: Nigeria* stirs empathy through the familiar struggle of survival, while *State of the Nation: Gaza* moves viewers through its universal cry against war and loss. Both compel reflection on human endurance and the search for meaning amid suffering and brokenness.
7. Ultimately, the two works stand as parallel meditations on survival within fractured systems, economic and political. Each transforms remnants into moral symbols, proving that art can rise from decay and pain. *State of the Nation: Nigeria* embodies internal collapse, while *State of the Nation: Gaza* protests external oppression together affirming resilience within destruction.

Figure 144

Spilt Dancers



Medium: Skull parts, other parts of the bones
(camel & cow) and Metal
Dimensions: 100cm × 18cm × 17cm
Artist: Osiboye Oluwaseun Opeyemi
Year: 2024

Description and Analysis

The artwork titled *Split Dancers* (Figure 76 above) is a sculpture in the round produced in 2025, measuring approximately 100cm × 18cm × 17cm cm. It is created from cow skull bones in particular the lower jawbones, teeth, and other bone fragments combined with a metal rod. The metal rod supports the dancer figures, symbolizing elevation and movement. A stilt dancer is a performer who walks and dances on stilts during cultural celebrations, a practice common in West Africa and the Caribbean, where it often holds spiritual meaning linked to ancestral spirits or protection from evil forces.

In this piece, the artist draws from those traditions to depict balance, agility, and grace. The sculpture was developed from an initial sketch and constructed using direct modeling methods such as slicing/cutting, engraving, and drilling. Bolts, nuts, and washers were used to fasten the bones to the metal rods, while araldite gum was applied to assemble the head and other parts. The components of the head were observe to be mostly from cow skull fragment. The metal components including the rods, bolts, nuts, washers, and base were painted matte black, contrasting sharply with the smooth, and sandpapered bone surfaces.

Through the interplay of material and form, the sculpture captures the vitality and discipline of the stilt dancers, whose grace is both physical and symbolic. The use of bone emphasizes endurance and ancestral connection, while the upward thrust of the metal rod conveys ascension and spiritual elevation.

Figure 145

Leadership and Commitment



Medium: Camel and Cow skull parts
Dimensions: 38cm× 28cm ×40cm
Artist: Osiboye Oluwaseun Opeyemi
Year: 2024

The artwork titled *Leadership and Commitment* above is a sculpture in the round, produced in 2024. The dimensions measure approximately height 38cm, length 40cm by width 38cm. The medium is treated cow bone which constitute (lower jawbone, teeth, and other skeletal parts). They were assembled using araldite gum and mechanical fasteners such as bolts, nuts, and washers. These fittings are visible at various joints, notably where the limbs and upper sections connect, giving the sculpture both structure and visual emphasis. The modeling techniques used include cutting/slicing, drilling, and assemblage.

At first glance, the sculpture presents a vertically oriented form composed entirely of natural bone elements arranged to resemble a stylized human figure. The upper section, made from overlapping cow jawbones, resembles a tray or load being carried on the head, immediately resembling the image of a street hawker. The torso and limbs are built from vertically fixed bones joined with visible bolts and washers, creating a skeletal yet dynamic impression of a figure in motion.

Though the composition might first appear to represent a street hawker struggling to survive, the deeper interpretation reveals a metaphorical reflection on leadership. The artist reimagines the hawker as a societal leader, one who must bear responsibility, serving with both endurance and humility. While the act of carrying a heavy load “with both hands” symbolizes commitment, passion, and readiness to shoulder the burden of society.

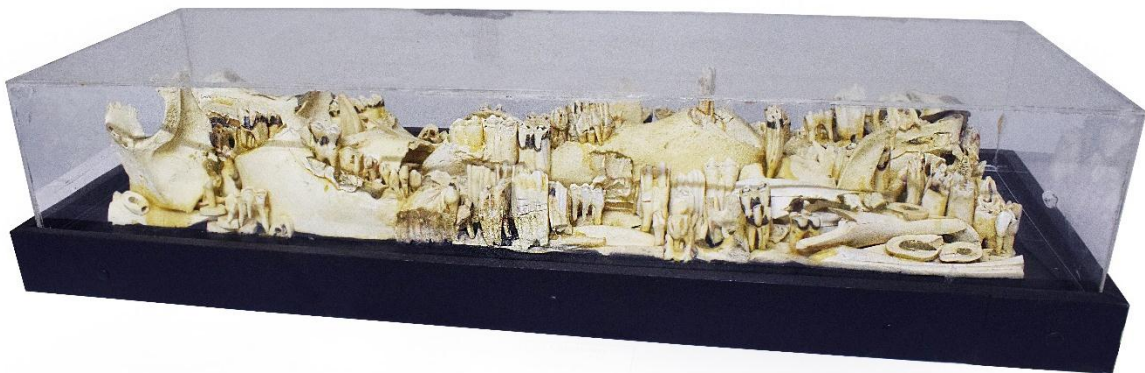
The upper portion of the sculpture, expanding outward like an overfilled tray, serves as a metaphor for the many responsibilities, expectations, and challenges that

leaders face. The mechanical fasteners not only hold the structure together but also suggest institutional systems and frameworks that both support and constrain leadership.

The work implies that genuine leadership arises from service, empathy, and commitment, rather than privilege or status. Ultimately, *Leadership and Commitment* is a profound sculptural statement on responsibility, endurance, and moral strength. The artwork captures the dual nature of leadership as both a burden and a service and celebrates the selfless dedication required to uphold society's wellbeing.

Figure 146

Hills and Valleys



Medium: Camel & Cow Skull Parts and Fragments

Dimensions: 15 cm x 81 cm x 21 cm

Artist: Osiboye Oluwaseun Opeyemi

Year: 2024

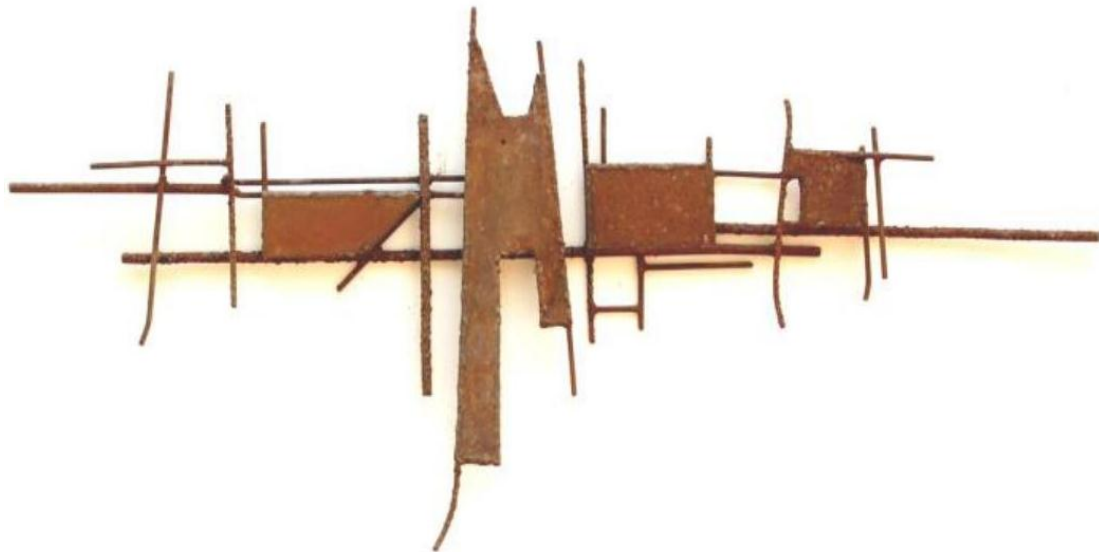
Hills and Valleys is a sculpture in the round, produced in 2024. The dimensions are 15cm x 81cm x 21cm. The medium is bone specifically, the skull parts of camels and cows, including the cranium, upper and lower jawbones, eye sockets, and teeth. These bones were carefully cut/sliced, and sandpapered into various forms and structure to achieve the desired composition. The joining process was carried out using Araldite gum,

which demands patience and precision since it dries slowly (slow setting) and must be applied accurately to maintain the desired balance and form.

Visually, the sculptural piece produce the image of a dense landscape filled with natural formations such as hills, valleys, vegetation and irregular terrain. This representation is quite uncommon in sculpture, as landscapes are traditionally explored through painting rather than three-dimensional art. The artist's creative approach aligns with the influence of sculptor Ken Okoli, who, according to Lamidi (2016), challenged conventional art history's focus on landscape painting by producing relief landscape sculptures inspired by the Zaria environment. This connection situates Hills and Valleys within a broader discourse of innovation in Nigerian sculptural practice.

Figure 147

Korfa 2020



Artist: Ken Okoli
Medium: Mild steel
Dimensions: 112cm x 45cm
Year: 2011

Korfa 2020 is a stylised relief sculpture produced in 2011 by Ken Okoli. The dimensions are 112 cm by 45 cm. The medium is mild steel specifically metal rods and plates. Being entirely metallic, the artist employed welding and cutting technique as the primary modelling technique. The artwork demonstrates the artist's technical proficiency in cutting metal plates into desired forms and structures. The skillful use of metal rods is adorable, particularly in creating the foreground and perspective elements of the relief through varying sizes of rods. The rods, bent and curved to follow the contours and give a definite edge to the sliced plates, so as visually define the kofars (city gates) and enhance the aesthetic of the work. The careful bending of the metal at most point where it meets the fore ground suggested structural strength and visual pleasure. Furthermore it reflects the artist's mastery of material and composition, such that reflects exploration of forms and structure of some basic inorganic shapes.

Hills and Valleys metaphorically represents the journey of life, filled with both triumphs and struggles (ups and down). The hills symbolize success, happiness, and progress, while the valleys signify challenges, hardship, and emotional lows. Through the natural texture of bone, the artist conveys the unpredictable rhythm of existence, ranging from growth to struggle and renewal. While human effort plays a role, the work ultimately suggests that the greater control lies in divine hands. The artwork transforms animal bones into a landscape metaphor that mirrors the complexities of human experience.

Overall, *Hills and Valleys* embodies the interplay between life's soft and hard moments, hope and despair, joy and sorrow. The piece invites viewers to reflect on

resilience, vulnerability, and endurance. It encourages the appreciation of life's contrasts, where both the hills and valleys are essential parts of human growth and transformation.

Figure 148

National Entanglement



Medium: Cow lower Jaw bone and Metal

Dimensions: 46cm × 28cm × 25cm

Artist: Osiboye Oluwaseun Opeyemi

Year: 2025

Description and Analysis

National Entanglement is a mixed-media sculpture-in-the-round constructed from cow lower-jaw bones and metal scraps, materials chosen for both their physical properties and their socio-symbolic resonance. The composition adopts the metaphorical form of an octopus, a creature whose multiple tentacles are often associated with control, entrapment, and systemic reach. The artist repurposes four cow jawbones as symbolic representations of key national sectors such as finance, industry, agriculture, education, and culture. These bones, positioned as foundational components of the work, evoke the fragility and vulnerability of the institutional frameworks they stand for.

Formally, the sculpture features eight tentacle-like metal extensions radiating outward in dynamic yet chaotic directions. Their contorted paths create a sense of instability, recalling the complex and often turbulent nature of governance in Nigeria. The contrast between the polished, naturally curved bone surfaces and the rugged, rusted textures of the metal fragments reinforces the thematic tension between organic systems (citizens, society, national resources) and mechanical or bureaucratic structures (state apparatus, political machinery). The three-dimensionality of the work further enhances viewer engagement, as the sculpture demands to be observed from multiple angles to fully appreciate its interlocking forms and the depth of its symbolic entanglement.

Conceptually, *National Entanglement* is grounded in contemporary socio-political issues in Nigeria. The work references recent incidents in which animals including snakes and monkeys were absurdly cited as culprits in cases of missing public funds. These narratives, widely circulated in the media, became emblematic of a broader culture of evasiveness and the trivialization of corruption. By drawing from these events, the

sculpture situates itself within a critical national discourse, using satire and symbolic exaggeration to expose the dysfunction embedded in political leadership.

The octopus metaphor becomes central to the work's interpretive framework. Its eight tentacles signify pervasive systemic challenges such as maladministration, nepotism, tribalism, religious sentiment, and embezzlement factors that undermine the effective functioning of national institutions. Instead of offering protection or stability, the tentacles appear to suffocate the sectors represented by the bones, visually communicating the corrosive impact of prolonged mismanagement on national development. The use of bone, a material associated with death, erosion, and the remnants of past life, underscores the idea that the affected sectors have undergone severe deterioration. In contrast, the metal scraps suggest fragmentation, exploitation, and the harshness of a political structure that operates with little regard for accountability.

Evaluatively, the sculpture is successful as a critical visual commentary on Nigeria's socio-political landscape. The integration of discarded organic and industrial materials not only strengthens the aesthetic appeal of the work but also deepens its conceptual significance, allowing the sculpture to function simultaneously as an artistic expression and a socio-political critique. Through this visual metaphor, the artist highlights the entanglements that obstruct national progress and calls attention to the urgent need for systemic repair. *National Entanglement* ultimately stands as a compelling artistic indictment of contemporary governance failures, inviting reflection on the structural reforms required to revitalize the sectors suffocated by entrenched administrative corruption.

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter is a presentation of the summary of the research findings, the conclusion and recommendation. It also covers the contribution to knowledge and implication of findings.

6.1 Summary

This study examined the exploration of animal bones with focus on skulls precisely camel and cow skulls as an unconventional medium of expression in sculpture. To be precise, the study aimed to explore how camel and cow skull and parts can be used as an unconventional medium of expression in sculpture through physical change (up-cycling) that is carving and assemblage which imply the following modelling technique slicing/cutting, drilling/boring, engraving, pasting, binding and installation.

The research methodology employed for the study was a studio exploratory method, while analysis of data was carried out through observation and descriptive method of data analysis. The camel and cow bone skulls and skull parts used for the exploration were sourced for from three different abattoirs across the country due to proximity and availability of the camel and cow bone parts desired for the study. Precisely the camel skulls and parts were collected from Kano Abattoir Limited located in Dala Local Government Area of Kano State. The collection of the Cow skulls and its components seems much easier because almost every abattoir across the country slaughters cow regularly in Nigeria compared to camel. Nevertheless the researcher retrieved the cow skulls from the following abattoirs Kano Abattoir Limited located in

Dala Local Government Area of Kano State as mentioned earlier for the collection of camel skull, Ikpoba Okha Government Abattoir (Abattoir Road Ikpoba Slope) Benin, Edo State and Odo Eran, behind Adeola Odutola College, Ijebu Ode, Ogun State.

The analysis of studio outcomes was presented in visual and narrative forms to answer the Research Questions. The result revealed that all the Research Questions were answered with positive affirmation. The study revealed the followings:

1. That it is possible to make clean and treat bones against bacteria, to make bone dry and ready for the production of artworks
2. The study brings to light how creative rhythmic expressions can be created from camel and cow skull parts
3. The study reveals how skull and skull fragments (parts) were used to conceptualised and actualised visual images in order to unveil the inherent qualities in it for visual appeal in sculpture.
4. That mixed-media sculpture can be explored using skulls and its parts along with other medium in arts”
5. The study also reveal how bone can be pertinated in order to retain its natural colour thus preserving the bones through use of wax, transparent lacquer

6.2 Conclusion

The exploration of organic and natural materials within our immediate environment, along with the adoption of innovative techniques in visual expression, plays a vital role in advancing sculptural practice in Nigeria. We are in an era of inquiry and environmental exploration, aimed at harnessing the organic and natural resources

available to humanity. Artists working within a specific locality are encouraged to utilize nature's elements in their creative processes. Doing so not only enriches their artistic output but also deepens their understanding of the philosophy embedded in their environment. According to Chopra (2020), nature "is not just a place to visit; it is home, and it constantly offers us lessons, healing, and connection, if we are willing to listen."

The adaption of an organic material as an unconventional material as medium of expression in sculpture is of paramount importance to the development of artistic and sculptural practice. It has enriched artistic expression and it is capable of more monumental achievements. The transformative processes involved are highly dynamic, resulting in works that embody both aesthetic significance and cultural value. This evolution in approach fosters a new paradigm in artistic perception, allowing the artist to reimagine bone not merely as a skeletal structure, but as a meaningful medium and creative ally in sculptural expression.

The study was able to review and adopt for the research two methods of cleaning and treating camel and cow skulls and its parts, which was also formulated to suit the study. They were the Boiling method and Burying method of cleaning bones, but the Boiling method was more preferable. Rhythmic expressions were created from camel and cow skull parts and conceptualization of visual images through the use camel and cow skulls and its parts were explored through different techniques of modeling in sculpture such as carving and assemblage. They were carried out through slicing/cutting, drilling/boring, engraving, pasting, binding and installation. The modeling techniques adopted during the study produce both low relief sculpture, high relief sculpture, sculpture in the round and mixed-media sculpture.

It was also documented in the study as well the mixed media exploration, which gave birth to the combination of bones with other medium of expression in art/sculpture to be precise metal and acrylic paint. The mix-media exploration lead to the production of low relief sculpture, high relief sculpture and sculpture in the round. As regards finishing or pertination different methods or material were explored in other to keep the natural colour of the bones such as waxing of the bones, smooth or coarse sandpapering finishing without the application of any other material and the use of transparent lacquer, which suggest a gloss finishing but keeps and preserve the natural colour of the bones.

Certain activities or treatment carried out on the bones during the burying and boiling techniques of cleaning the bones are of the same approach. Such activities/treatment are washing of the bones with detergent and rinsing with water, degreasing of the bones through boiling of the bones, soaking of the bones inside hydrogen-peroxide solution and rinsing of the bones inside ethanol solution.

The appearance of the bones or the result of the last step of treatment on the bones will determine the next line of action/treatment on the bones. For instance, during the burying method of cleaning bones, when the bones are exhumed and it is discovered that the remains on the bones have not been properly decayed, the burying is been repeated. Also during degreasing it might be observed as well that so much fat is still remaining in the bones most especially camel bones. In this case, it will be advisable that the degreasing process should be repeated. A lot of factors could be responsible, some of which are the type of soil in which the bones were buried, the part of the skeletal system involved in the particular process (that is the skull may respond differently compared to the scapular or cervical vertebra during treatment), the type and nature of the particular

animal bone involved because it was observed that camel bones have more fat than cow bones etcetera.

Figure 149



Freshly Cut Out Camel Bone Skull

Photo: Osiboye Oluwaseun Opeyemi,

The state at which the bones were found before getting to the studio determines the type of treatment is to commence from on the bones. It is not all the time that the treatment on the bones starts from the boiling stage. For instance (Figure 152) suggest a freshly cut out camel bone skull, when it is observed that the bone is no longer fresh. Perhaps the bones have already passed through the decaying process such that the flesh, blood, and marrow have already been removed one way or the other most especially through natural means (weathering). The bone might be dry already and in such a case, it will be appropriate to commence treatment from the stage of washing the bones with detergent as there would be no need for boiling or a shorter boiling process may be used if need be.

6.3 Implication of Findings

Based on the conclusion drawn in this study, the following are the research implications:

1. The researcher identified the boiling and cleaning of camel and cow skulls and their fragments as the most challenging aspect of the process, due to the strong odor and physical irritation caused by the decomposing tissues and bone residue.
2. Camel and cow skulls, whether used as a whole or in parts, have emerged as viable sculptural media for creating low reliefs, high reliefs, sculptures in the round, and mixed-media works.
3. The compatibility of bone with other artistic media was established, demonstrating its effectiveness in mixed-media sculptural compositions, particularly in combination with acrylic paint and metal.
4. This research offers a model that can be replicated to encourage the up-cycling, recycling and reuse of waste materials, other animal skulls thereby promoting sustainable art practices and environmental responsibility.
5. During the investigation into the preservation and finishing of the bones, the researcher found sanding and the application of clear paint to be more technically reliable, particularly when the bones were properly prepared. Waxing, however, tended to attract and trap dust on the bone surfaces, making it less suitable for long-term preservation.

6.4 Contribution to Knowledge

This study contributes to the advancement of knowledge in contemporary sculpture and sustainable art practices in the following ways:

1. It revealed the possibility that exist in use of animal skull in the production of sculptures.
2. The study offers detailed knowledge and practical methods on how to clean animal skulls and bones, particularly those of camel and cow skulls as well as their individual parts, during the decaying process. It explains how to remove maggots, flesh, blood, bone marrow, and other biodegradable substances, including the cartilaginous parts of bones. It also contributes valuable techniques for disinfecting bones to eliminate bacterial infection and microbial contamination, thereby making them safe for human handling and artistic use.
3. The research introduces camel and cow skulls as well as their individual parts as viable media of artistic expression, offering artists, sculptors, and academic scholars a new frontal for creative explorations in sculpture.
4. The study demonstrates the compatibility of camel and cow skulls, as well as their individual parts, with other artistic media such as acrylic paint and metal. This finding broadens the scope of mixed-media sculptural practices and supports the seamless integration of organic materials with synthetic or industrial components.
5. The study contributes to environmentally sustainable practices in sculpture. This aligns with global efforts toward up cycling and resource conservation within the visual arts.

6. The research provides insight into how local artists and communities can create economic value from waste materials that are often discarded. This promotes entrepreneurship and adds economic relevance to art-making, especially in regions where camel and cattle are commonly reared.
7. The study presents a detailed record of studio experimentation, including visual and written documentation of processes and outcomes. This strengthens the academic discourse on studio based research and serves as a resource for art students, lecturers, and practicing sculptors, particularly those exploring indigenous or unconventional materials.
8. By transforming camel and cow skulls from their traditional associations with death, decay, or ritual into objects of aesthetic and symbolic value, the study contributes to new interpretations of material culture in contemporary African art. This recontextualisation challenges prevailing narratives and expands the conceptual possibilities of sculpture.

6.5 Recommendations

The recommendations in this study include the following:

1. Having successfully treated camel and cow skulls and their individual parts against bacterial and viral infections, and having utilized them to produce both two-dimensional and three-dimensional artworks including low relief, high relief, and sculpture in the round. The researcher recommends the further exploration of other animal skulls and bones for sculptural purposes. This will broaden the scope

of material experimentation in the visual arts and encourage new forms of expression.

2. In light of the environmental, aesthetic, and educational values embedded in recycling, reuse, and up-cycling practices, it is recommended that Fine Arts departments consider creating a dedicated course or module focusing on these themes. A comprehensive syllabus should be developed to guide studio experimentation and theoretical engagement with sustainable art practices.
3. Artists, researchers, and studio assistants involved in sourcing and preparing animal bones must exercise extreme caution. Exposure to rotting bones or inhalation of bone dust during activities such as slicing/cutting, grinding, drilling, or sanding can pose serious health risks, including bronchial infections and diseases such as pneumonia. Therefore, the following safety measures are strongly recommended:
 - Use of personal protective equipment (PPE) including nose masks, rubber gloves, rubber boots, and full-body treated overalls.
 - Application of disinfectants such as hydrogen peroxide and antiseptic solutions (e.g., Dettol or Isla) before and after bone handling.
 - Immediate bathing with warm water and antiseptic soap after studio sessions.
 - Regular sterilization and changing of protective gear and studio wear.
4. To promote sustainable creativity and community engagement, local art institutions and studios should initiate outreach programs that encourage the use of biodegradable and discarded organic materials, such as bones, shells, or wood

fragments in art production. This can serve as a platform for environmental education, skill acquisition, and entrepreneurship.

5. Artists working with organic or biodegradable materials should consider collaborating with environmental scientists, microbiologists, and chemists to ensure safer handling and better preservation of materials. Such interdisciplinary efforts can lead to the development of eco-friendly treatments and innovative conservation methods for organic art media.
6. Institutions and art researchers should prioritize the documentation of experimental studio processes, especially when unconventional materials are involved. This includes visual records, step-by-step procedural notes, and reflections on outcomes. Proper documentation enriches academic knowledge, preserves technical discoveries, and serves as a learning resource for future researchers and students.

6.6 Suggestions for further Research

This study has successfully established camel and cow skulls and their individual skull parts as viable and unconventional media for sculptural expression. However, several related areas remain open for further investigation and artistic exploration.

1. While this research focused primarily on the physical transformation of camel and cow skulls and their individual skull parts for the creation of two-dimensional, three-dimensional, and mixed-media sculptural artworks, future research could investigate the chemical alteration of bones for artistic purposes. This may include

experiments with dye absorption, controlled decomposition, chemical preservation techniques, or bonding reactions with other substances to produce unique textures, finishes, and structural effects.

2. This study was largely limited to indoor or studio-based artworks. It is recommended that future studies explore the suitability and durability of camel and cow bones for outdoor sculptures. Investigations could include weather resistance, long-term preservation under varying environmental conditions, and treatments that could enhance bone longevity in public or open-air installations.
3. During the studio exploration, certain bone fragments due to their texture, form, and aesthetic appeal were observed to possess potential for use in fashion accessories and wearable art. Further research could explore how camel and most especially cow bone parts can be safely and artistically transformed into bangles, necklaces, earrings, rings, such that could replace embroidery or floral appendix on fabric wears and other wearable forms, thereby expanding their functional and commercial value.
4. This study focused specifically on camel and cow bones. Future studies may consider the exploration of other mature and malleable animal bones, such as those from goats, rams, or horses, to determine their suitability for sculptural expression. Such research could involve comparative analysis of texture, strength, malleability, and artistic potential

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