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Rejuvenating the junks: Exploring scrap metals as alternative materials for Ghanaian sculptors

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Abstract

The focus of this studio-based research is to transform scrap metals into aesthetic masterpiece of art. It is premised on the assumption that the intuitive technique of rejuvenating junks provides the freedom and flexibility to exercise creative expressions on a three dimensional level of art. This study therefore seeks to rejuvenate junks thereby analyzing scrap metals as alternative materials for Ghanaian sculptors. Having identified the aesthetic and artistic expressions of scrap metals, therefore, a piece of sculpture was created with scrap metals as means of establishing the viability of the materials as potential material for creation of sculpture with a story to tell. It also brings out the value of a composed scrap metal bull with different approaches, techniques and procedures as abound in the composition of the work.

Keywords: aesthetic, alternative materials, Ghanaian sculptors, junks, studio-based

1. Introduction

Rejuvenating junks has become a eclectic way of repurposing found metal objects like scraps into art. Scrap metals are rusty pieces of nuts, bolts, iron, spark plug, nails, automobile and motorcycle parts. They are fragment, piece of discarded compact material (an element, compound or alloy) that have typically hard, opaque, and shiny features of good electrical and thermal conductivity. The creation of art from these rusty pieces leaves indelible imprint on the mind of its observers.

Ghana, sculptors of the past and present often relied on traditional materials such as wood, cement and clay for production of works. This old practice tends to influence the progress, development and maturity in sculpture. Looking at metal especially its scrap fragments from artistic point of view, it possesses the potential of providing artists with another dimension of material base even with the use of unwanted scraps left overs that seem less important to scrap dealers.

Found objects are mostly seen in the environment such as scrap metals. Artistically, scrap metal art is formed by composition of scrap metals in the environment through methods and techniques such as welding, riveting, gluing and tying. Many sculptors like El Anatsui, Kwatei Nii Owoo, Wanssi Massimo, Abu-Bakarr Mansaray, John Lopez, Alexander Calder, Alexander Rodchenko, Julio Gonzalez, Anthony Caro, Micajah Bienvenu, Lee Kelly, Rudy Kehkla, Jeremy Mayer, Miran Elbakyan, Alex Kveton and others have used metals for numerous reasons. They include aesthetics and expressions of certain ideas and philosophies in their sculpture pieces. Attraction of creating something of unique value from scrap metals is what has motivated many sculptors, metal artisans like welders to explore into new form of art called scrap metal art. Most of the great scrap metal artists are the ones who have been welders for a long time.

Rejuvenating junks for art has became predominant activities that require a complete focus and vision. Artists create scrap metal art with a grand imagination. The raw material used in the making of those pieces of art is toted back to the home from the local yards. These rusted metals are sterilized and the old deposited on them is burnt off. Then these metals are manipulated into such beautiful life-size sculptures. According to Makofsky (2014) many scrap metal sculptures are created to be useful objects. One can find scrap metal wall hangings, planters, garden art, mirrors, tables, desks, chairs and even sofas in exterior and interior spaces or patio.

These scrap metal objects mentioned by Makofsky (2014) practically talk about aesthetic and junk art as Carlson (2000) describes that whether or not such art is aesthetically pleasing depends to a great extent on its expressive qualities and on the expressive

qualities of the materials from which it is constructed. On the other hand, when people find such art distasteful, this is often because the materials have kept their original expressive qualities. The artist has not reworked the materials so as to prevent the art work from expressing rather questionable life values. Perhaps this is why some people find distasteful works such as, for example, Duchamp's *Fountain* (1917)- the famous urinal palced in an art show. On the other hand, people often find junk art aesthetically pleasing (and morally satisfying). Carlson (2000) further stresses that therefore discarded objects that would otherwise express waste and disregard are reworked such that they now, as a work of art, express utilization, concern and sensitivity.

This study therefore seeks to rejuvenate junks thereby analyzing scrap metals as alternative materials for Ghanaian sculptors. Having identified the aesthetic and artistic expressions of scrap metals, therefore, a piece of sculpture is created with scrap metals as means of establishing the viability of the materials as potential material for creation of sculpture with a story to tell. It also brings out the value of a composed scrap metal bull with different approaches, techniques and procedures as abound in the composition of the work.

2. Materials and Methods

Being a studio-based research, aesthetico-action research design was adopted for this study. This research design was focused on individual experiences as well as human interaction that allowed the study to analyse scrap metals as alternative material for aesthetic and artistic expression. This was chosen because it provided a systematic way of looking at the sequential way of executing the work and documenting results of procedures undertaken. This process is reflexive and includes cycles of creating—observing—reflecting—creating that occur simultaneously (Marshall, 2010).

Again various materials, tools and the step by step processes that were used in executing the the scrap metal art were described. Tools for this study comprised of hand implement or equipment. They were used in easy production and performance of task. Materials on the other hand, are physical substance of worldly nature of which the artefacts are composed or made. Materials come in two forms where one is organic and the other is inorganic. Organic materials are materials that can decompose and are naturally made. Examples are wood, ivory and bone. Inorganic materials are chemical or artificial substance containing less or no carbon substances. Examples are metal, fiberglass and cement.

Purposely for this study, inorganic materials made of scrap metals such as car rims, metal square/round pipes, bolts and nuts, nails, spoon handles, spring fenders, copper wire, iron rods, anti-rust paint, electrodes, protective gloves and goggle were employed for the execution of work. Others were tools and equipment such as bolt cutter, cold chisel, welding machine and sledge hammer in the processes of fabricating the scrap metals.

2.1 Skills and procedures for the execution of work

The significance of skills and procedures as intermingled in the execution of scrap metal art illustrated how two technicalities and disciplines can actually work together in producing a profoundly harmonic effect. Consequently, successful recruiting of these elements necessitate a high degree of artful humanity. In studio-based research, these artistic approaches from aesthetico-action method allowed the researcher for subjective interpretation of these two approaches in executing the work. The concept involved these two approaches and practices deepened the knowledge of the researcher whereby procedural knowledge of the work where focused. Skills and procedures were the fundamental ability, expertise or dexterity used in the execution of scrap metal art done in certain order and manner.

The researcher employed elements and principles of art, conceptualisation of direct observation that accounted for the skills and procedures for the execution of the scrap metal art. These skills and procedures are accentuated in the processes or procedures for the construction of the scrap metal art.

2.2 Techniques

Techniques employed for this study comprised the manner in which technical details and procedures were used to accomplish the construction of the scrap metal art. Civardi (2007, p. 5) says that "For someone to be able to acquire or learn a technique of something, the person must go through experimentation, practice and constant application". The study utterly agreed on the submission of Civardi (2007) that for espouse of techniques one needed to follow procedures, experimentation, practice and constant application. Uniquely and distinctively one needed to adopt technique for recognition. There are several techniques of joining metal parts together. These several techniques are mechanical interlocking, mechanical connection (screws, nuts, bolts, rivets), gluing or chemical bonding, welding methods (friction and diffusion), brazing procedures, soldering processes. Joining scrap metals were most often done by welding techniques. Based on this technique, arc welding was adopted because it had the preferred characteristics to the other welding techniques. This technique is used for

both interior and outdoors works. It joins or repair very thick materials.

2.3 Procedures

Procedures are application of specific order that must be carried out to achieve a desired results. The fundamental aim of this study hinged on scrap metal art and how contemporary Ghanaian sculptors could do away with traditional materials and explore unconventional materials like scrap metals by contributing their quota to ensuring environmental sanitation. In the past, Ghanaian sculptors basically relied on traditional materials for production but in this technological era materials keep changing. This study chose scrap metal as alternative material for Ghanaian sculptors.

In choosing this material, a central idea that involved logical step approach with fixed sequential approach were formed and demonstrated for the execution of scrap metal art. This called for creative imagination and skills in producing aesthetically pleasing objects, environments, and experience. The study employed six procedures in executing the scrap metal art by acquiring scrap metals, developing conceptual sketches, preparing surface of scrap metals, composing them, cutting and forming processes using arc welding technique and finishing the scrap metals.

Procedure 1: Acquisition of scrap metals

Acquiring scrap metals for the execution of work came in many forms, sizes and shapes which had unique characteristics that made it suitable for the desired work. As mentioned earlier on tools and materials for construction of work, the study identified and bought scrap metals that suited the theme of the work titled "Struggle for Perfection".

In acquiring the materials for the construction of the work, scrap metals were bought from scraps dealers and some were also collected from colleagues whose car parts were not in use. This facilitated in choosing scrap materials such as car sumps, rotor (disk brakes), shocks/spindles, cam sprocket, wheel rims, exhaust manifold, spring fenders, iron rods, bolts and nuts, iron rods for the desired work. Locations such as Assakae scrap metals, West Tanokrom, Kokompe no.1 and no.2, and other metal works in Takoradi were much exploited for this study. The figures 1, 2, 3 show the various scrap metals acquisition from the mentioned locations within the Sekondi/Takoradi metropolis.

Figure 1: *Location No.1 — Assakae Scrap Metal Yard (Source: Donkor, 2015)*

Figure 2: *Location No.2 — West Tanokrom Scrap Metal Yard (Source: Donkor, 2015)*

Figure 3: *Location No.3 — Kokompe No.1 and No. 2 Scrap Metal Yard (Source: Donkor, 2015)*

Procedure 2: Conceptual development of scrap metals into sketches

With regard to the nature of the study, series of sketches were drawn to fit the theme called "Struggle for Perfection" for the work. This process brought out the critical and analytical forms of two dimensional sketches into three dimensional form. Modelling of forms were done with free hand and later scanned and enhanced it with computer.

Conceptual sketches

The conceptual sketches developed for this study took its source of inspiration from Rodeo. The tradition of Rodeo is an exhibition or contest in which cowboys show their skills at riding broncos, roping calves. The Philosophy of Rodeo as originated in the 19th century from Spain brings fun to its observers. This sport abounds in so many forms which has contributed to humanity but has not been utilized in artistic contexts especially in Ghanaian Contemporary art. This sport has been a great guidance on the form of sculpture created for the construction of scrap metal art. After judiciously studying the various poses of the action bull from different angles, a particular one was picked for this study and suitable sketches were made considering its philosophical connotation

on academics. The figures below show a sketch of conceptual bull developed into illustrative sketches in different poses for this study.

Figure 4: *Conceptual bull (Source: drawing-pencil-sketches.com, 2014)*

Figure 5: *Sketch one*

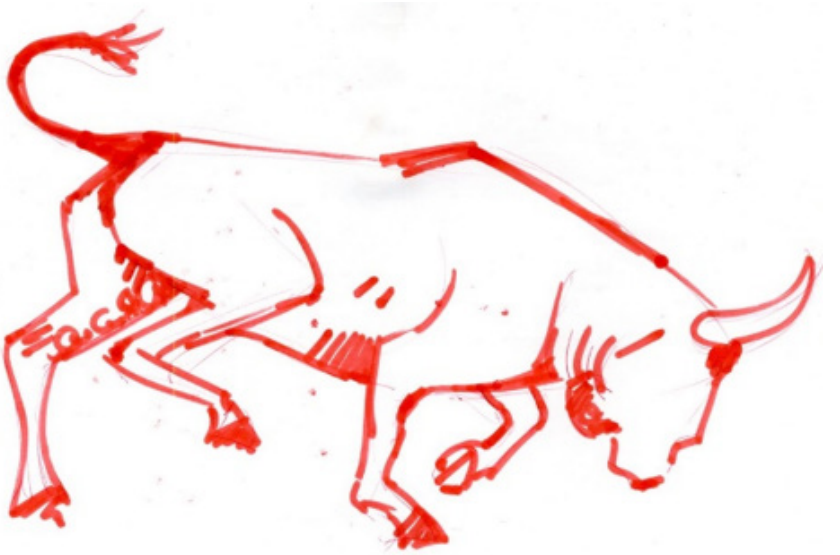

Figure 6: *Sketch two*

Figure 7: *Sketch three*

Figure 8: *Sketch four (Final)*

Procedure 3: Surface preparation of scrap metals

Surface preparation of scrap metals especially scraps with oil or grease on the surface were removed using a rug. This was based on the experienced that grease or oil scrap metals tend to catch fire while welding. Where possible, the affected parts were rubbed with cloth. All loose rust and surface coatings were removed to ensure proper welding fortification of scrap metals.

The surfaces of scrap metals acquired were also roughened preferably with abrasive. Alternatively a die grinder or angle grinder was used. When grinding, it was emphatically made sure that surface was roughened, not polished. Grinding the surface was cross scored to improve adhesion when welding. All these treatment of surface preparation of scrap metals were done to ensure proper welding of the constructed and assembled work. Figure 9 shows how the scrap metals surfaces were prepared to receive a good welding.

***Figure 9**: Preparing surfaces of scrap metals*

Procedure 4: Construction and assemblage of scrap metals into art

Artworks can de done in diverse forms, but no matter which form, it must be expressive and close to nature and creation. At this stage of the project, creative skills or potentialities to the maximum and expertise was brought out. The fascination of making one thing stunning out of a discarded one attracts several people to the craft of scrap metal art. Scrap metal art "Struggle for Perfection" composed of car shocks, tire rims, bolts and nuts, spring fenders, tin cans, steel wire, and automobile engines components is just some of the inventive potentialities. Constructing and assembling junks were made by joining preformed pieces of scrap metals by arc welding. This differs radically in principle from carved and modelled sculpture, but of which are fabricated out of a homogeneous mass of material. Constructed and assembled scrap metals were made out of such basic preformed components as metal tubes, iron rods, plates, car engines parts, tire rims, bolts and nuts. These were cut to various sizes and shaped before they were assembled or used as they were. Assembling and constructing were usually reserved for constructed scrap metals that incorporates any of a vast array of ready-made or found objects, such as car parts like rims, spring fenders etc., old farm machineries, random bits of hardware

and bits of discarded appliances. Numerous techniques had been employed for joining these components, most of them derived from crafts other than traditional sculptural ones; for example, metal welding and brazing, wood joinery, bolting, screwing, riveting, nailing, and bonding with new powerful adhesives but which the study employed the metal arc welding technique. The methods of creating these impression on artistic ground just needed uniqueness and imagination with blend of scrap metals and a couple of techniques for manipulating them into art works. At this stage of the production process, virtually nothing was wasted. It was easy to accumulate a lot of raw materials for this study. An armature of framework was created with iron rod to hold the pieces in place. Measurement was taken for the size of the sculptural work. Pieces of the measured iron rods and scrap metals were arranged and composed in order to achieve the final result. The Figures show how scrap metal art was constructed.

***Figure 10 (A)**: Selected metal base*

Figure 10 (B): *Measuring of iron rods*

Figure 10 (C): *Cutting of iron rods*

Figure 10 (D)*: Bending of iron rod on work base*

Figure 10 (E)*: Testing of bent iron rod*

Figure 10 (F) *Curling and perforating of metal base for iron rod*

Figure 10 (G): *Tacking and welding of iron rod*

Figure 10 (H)*: Constructed armature for the work*

Figure 10 (I) *Attaching scrap metals onto the armature*

Procedure 5: Arc welding, cutting and forming processes of Scrap metal art

The philosophy of arc welding, cutting and forming processes of scrap metal art prepared the skill and productive workforce by promoting creativity, respect for diversity and formation of a strong work ethic. The construction of the scrap metal art was done by arc welding and some fabrication techniques. Arc welding metal technique was the process utilised for the concentrated heat of an electric arc to join metal by fusion of the parent metal and the addition of metal to joint usually provided by a consumable electrode. Arc welding was the main technique for the constructing of scrap metal art. The formed and machined parts of the scrap metals were assembled and tack welded into place then rechecked for accuracy. Special precaution was taken to prevent warping of the welded pieces due to heat. Heat was selectively applied to the scrap metals in a slow, linear sweep. The scrap metals had a net contraction, upon cooling, in the direction of the sweep. This highly skilled processes removed significant warping using this technique. Forming the scrap metals was the process of materials deformation. The scrap metals pieces was formed by applying force to it. The force was great enough to change the shape of some objects from its initial shape.

This process of forming was controlled with the use of tools such as pinches and dies. Metal cutting and forming processes used for the construction of scrap metal art were the building of metal structures by cutting, bending, curling, perforating and assembling processes:

Cutting: The cutting process was done by shearing, sawing and chiselling scrap metals with manual variants into specific shapes and sizes for the purpose of the study.

Bending: This was done by hammering some parts of scrap metals to fit the desired shape for the work. Iron rods were bent to form the framework or armature of the exact work.

Curling: This method or process was applied to some parts of scrap metal forming of the constructed work. It added a hollow, circular roll to the edge of the metal sheet. The process used the hand type of metal curl to curl the need portions of the work than the machine metal curl as fabricated to achieve the curl.

Perforating: This was a cutting process that punched multiple small holes close together in flat scrap metal pieces. This was done using electrode and arc welding process on lighter scrap metals to bring a wide variety of surface texture to the composition.

Assembling: Scrap metal art were done by assembling and joining processes where the pieces of metals were joined using arc welding technique. These objects were put together, heated and melted together, causing the joined parts to function as one. This stage consisted making three dimensional artistic compositions by putting together the found scrap metal objects.

Based on these processes, this study creatively used arc welding,cutting and forming steps for the scrap metal art (See Figure 11(A), (B) and (C)).

Figure 11 (A): *Arc welding processes of scrap metals into composition.*

Figure 11 (B)*: Arc welding processes of scrap metals into composition*

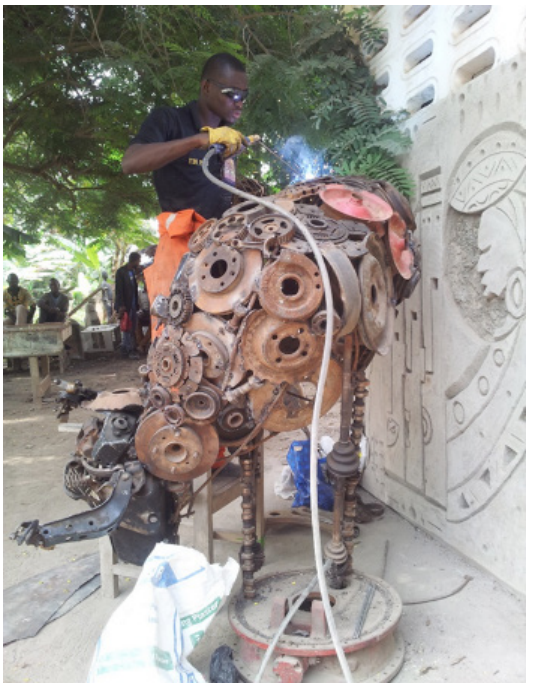

***Figure 11 (C)**: Arc welding processes of scrap metals into composition*

Procedure 6 - Finishing of scrap metal art

The effect of light on every individual's sight, type of finishing and climatic condition are all considerable factors when finishing a work of art. In this study, scrap metals played important role where scrap metal finishing processes involved treatment of scrap metals work pieces in order to modify its surface properties, impart a particular attribute to the surface, or produce a decoration due to its rusty nature of metals. Plating, painting or coating formed components of such finishing operations that involved putting a coating of anti-rust paint over a base scrap metals substrate to give various desirable properties to the object by leaving it natural rust finish. The reasons for carrying out this scrap metal finishing were that the anti-rust paint checked decoration of metal surfaces, protection against corrosion from rain and sunshine, provision of resistance to oxidation and high temperatures, or Ultra-violet radiation. It was also intended to check impartation of mechanical properties, such as resistance to fatigue, improvement of ductile strength, or longevity, resistance to the use of abrasives, and impartation of electrical or thermal properties such as semi-conduction, thermal resistance, fire resistance (See figures 12 and 13).

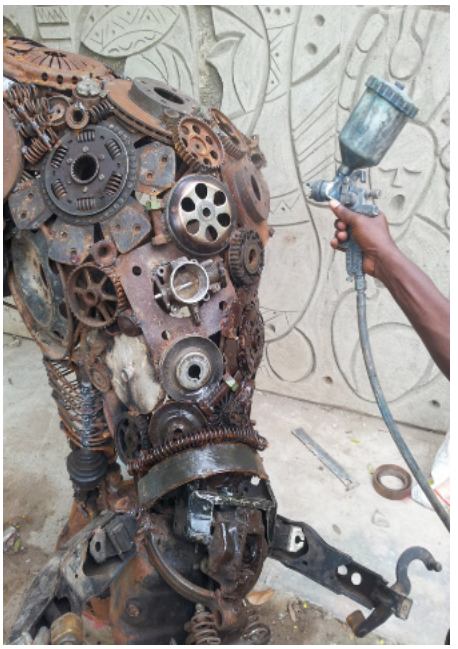

***Figure 12**: Spraying of Anticorrosive paint as finishing agent*

***Figure 13**: Struggle for Perfection*

4. Conclusion

Rejuvenating of junks for the creation of a sculpture piece titled "Struggle for Perfection" has therefore given credence to the assertion that scrap metal art cannot only rid the environment of the threat scrap metals but be an important source of materials for an exploration into other interesting components of sculpture making. "Struggle for perfection" right from its conceptual stages to final execution has indeed sent out a strong message in support of the need for sculptors to give scrap metal art a much greater thought. The sculptural work has not just provided aesthetic enjoyment to the numerous observers who troupe by each passing day, but been a marvel to many people (both artists and laymen) who least imagined that something so admirable could emerge from scrap metals. The discourse of rejuvenating junks from redundant metal objects to a composed scrap metal work cannot end without this study providing some recommendations for the development of scrap metal art; as well as the consideration of scrap metals from aesthetics perspectives.

Firstly, Ghanaian sculptors should not see scrap metals as garbage or junk but as an opportunity. Investment should be made into scrap metals as alternative materials for sculpture. This will provide Ghanaian sculptors with different approaches, techniques and procedures as they explore the aesthetics and artistic qualities of a different medium that abound in interesting techniques and procedures.

Again, aesthetic qualities of scrap metals, and their potential to serve as alternative raw materials for the Ghanaian sculptors have never been fully realised in Ghana. Being a non-traditional material in contemporary Ghanaian sculpture, sculptors should not seem to be oblivious and predominant show less concern for the exploration of its aesthetic qualities.

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About the author

Evans Kwadwo Donkor is a lecturer at the Sculpture Technology Department, Takoradi Technical University. He is best known for his composite sculptures made from scrap metals and discarded automobile parts and other industrial detritus. Donkor is pursuing a PhD programme in Arts & Culture at University of Education, Winneba. As an artist, he

strongly believes in bringing every material to life, reshaping and attaching the various components, giving old and new materials a new purpose as well as a bit of soul.