

WASTE AS EXPERIMENTAL MATERIAL IN SCULPTURE: A STUDIO  
EXPLORATION WITH USED RUBBER TYRES AND INNER TUBES

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**Abstract**

Artists have been participating actively in the international debates on global warming. While several of these artists have addressed issues of the environment with natural materials found around them, others have made their contributions using industrial products. This paper is a report on studio experiments with used tyres and inner tubes. It describes the studio processes involved, showing how improvisations were made in the actualisation of some sculptures produced. It also analyses some of the works that resulted from the processes, situating them in their social contexts. While the processes involved in the exploration were environmental friendly, the outcomes are conceptual, and they increase the awareness of environmental issues as well as the Nigerian cultural vitality in the viewers.

**Introduction**

Wastes are common within every human environment. They may be defined as “materials that people no longer have any use for, which they either intend to get rid of or they had already discarded” (European topic centre, n.d.). In different homes, people are faced with various kinds of wastes, ranging from kitchen litters to books, clothes, furniture, electronics and cars they have no use for. Waste can be classified into two major types: the biodegradable and the non-biodegradable wastes. Wastes that can disintegrate naturally in the environment within a relatively short period of time are referred to as the biodegradable while those that cannot are the non-biodegradable. Non-bio degradable wastes can last for about 10 - 50 years, or even more, before breaking down. And, of course, most of them pose serious health and environmental challenges in different ways to man.

Over the years, societies have made efforts to devise means of disposing non-biodegradable wastes. These sorts of waste materials are vast and may, among others, include industrial products such as plastic bags, aluminium cans, glass, metals and rubber. In fact, industrialisation has created serious problem of waste management. Abraham, Cherian, Elbi, Pothen and Thomas (2011) note that about 242 million tyres are discarded every year in the United States and these, according to them, pose a significant problem of waste disposal in the country. Tyre, of course, is a product of the automobile

industry. In Nigeria, many of the discarded tyres overseas have found their way into the country where they have become popular among many commercial transporters who prefer them to new ones because of their relatively cheap prices. Joseph Odumodu, the Director General of the Standard Organisation of Nigeria (SON), reveals in *Graph News* that the importers of used tyres into the country do not usually buy them; rather, they are being paid by different foreign countries to help dispose them. But they bring them to Nigeria to sell (Musa, 2013). According to Odumodu, SON has seized over five million tyres across the country within two years and, the organisation is faced with the challenge of disposing them because it can neither burn the tyres nor throw them into the sea for fear of pollution. Considering the fact that Nigeria is used as a “dumping ground” for “dead objects” which quickly become wastes, it is common to see them litter street corners, homes and even block drainages. Thus, the litters of these rubber tyres create stagnant water for breeding of mosquitoes, which spread malaria parasites.

Management of industrial wastes could be more challenging, particularly in developing countries where the resources for proper handling of wastes may not be adequately available. In most developing countries, there is no reliable statistics on waste disposal as it is in the United States. People seem to dispose wastes anyhow and anywhere without consideration of the health or environmental effects that they may cause. Granted, the spirit of recycling wastes is gradually developing in the country. Several people particularly the unemployed youths now pick and excavate metal scraps around for sale to metallurgical companies who recycle them. This metal scrap business has considerably helped in cleaning up the environment in a way. But some other non-biodegradable wastes such as plastic bags and rubber materials still litter urban spaces and countryside in Nigeria where they pose health risks. Unlike the metal scraps, people are yet to discover a healthy and lucrative way of recycling them and so they are scattered almost everywhere. However, several artists have sought ways to reuse wastes for creative works. In Nigeria, for instance, Amarachi Okafor, Uche Onyishi, Teju Olanrewaju, Ekene Anikpe, Felix Egbuluka and Amuche Ngwu have explored different kinds of wastes for visual expressions. These artists give life back to such waste materials they use - a kind of life after death.

While Amarachi Okafor and Uche Onyishi gather discarded plastic bags and transform them into visual narratives that address the adverse effects of these non bio-degradable wastes on the environment, Teju Olanrewaju, Ekene Anikpe and Amuche Ngwu explore discarded empty beverage cans, silver foils and plastics for creative effects. Felix Egbuluka has also worked with latex materials such as medical hand gloves to produce thought provoking installations. These artists adopted different inspiring studio methods of working with their selected non bio-degradable wastes as art materials, although some of the methods are not environmental friendly. For example, Uche Onyishi uses fire to burn his plastic bags to desired shapes before installing them. This process of burning the waste bags releases into the atmosphere some gas that pollutes it.

Waste materials may be likened to beings that have accomplished their course in life and should pass on to the afterlife. Reusing waste materials, especially in creating visual imageries, is one commendable way of resuscitating them. In Nigeria, used and discarded tyres are often found lying indiscriminately in the environment, posing various

forms of environmental challenges. For instance, tyres in stockpiles can house disease carriers such as mosquitoes that spread malaria (Abraham et al., 2011; Sullivan, 2006). They can also block drainages thus posing erosion and landslide threats. In attempts to get rid of the tyres and inner tubes people burn them. Occasionally, they use them to make bonfire as part of celebrations or burn them as a way of registering their grievances, particularly during protests and riots. For whatever reasons tyres are burnt, the exercise goes with some negative effects on the atmospheric environment. Aderemi and Otitolaju (2012), Dibofori-Orji and Braide (2013) and Oriaku, Agulanna, Odenigbo, & Nnoruka (2013) observe that the burning activity releases volatile acidic gases that may cause acid rain, ozone depletion, smog and global warming. Also discussing the effect of tyre disposal through incineration on human health, Sullivan (2006) maintains that inhaling the black smoke emitted by burning tyres can increase susceptibility to respiratory problems such as cough, wheezing and physical discomfort. It can even aggravate existing respiratory diseases such as asthma and chronic bronchitis in patients.

The risk posed by wrong method of tyre disposal in Nigeria informed this studio exploration which was carried out with discarded tyres. The exercise was aimed at recycling them for sculptural works and installation art. Exploring discarded tyres for visual imageries incidentally provoked the fundamental question of what processes and techniques could be effective for transforming this non-bio degradable waste into expressive art form. This paper therefore reports on studio attempts at recycling waste materials, particularly tyres, for visual narratives.

### **Materials and Tools of Production**

The basic materials used for the studio exploration tyres are provided with variety of tread patterns on the part of the tyres that comes in contact with the road to ensure maximum grip on the ground for the stability of the vehicles using them. These patterns make the tyres interesting materials for sculpture. Some of the used tyres and tubes employed in the exploration were picked along the roads, streets, and from homes in different villages within Nsukka Local Government Area. Others were collected from motor mechanics' and vulcanisers' workshops at the Nsukka Industrial Market. The copper wires used for carrying out this work were bought from electronic mechanics.

Various tools were employed in the exploration. They include angle-grinder, drilling machine, axe, knife, lamp burner, stove, motor-cycle spoke, and staple gun. Each of these tools was used for different functions, either to cut, join or smoothing aspects of the works in progress.

**Angle-grinder** was first used to cut the tyres into large parts which were later cut into smaller bits of about 2 or 3 inches each with a sharp knife. In the cases where there was no electric power supply, knife was used to do the entire cutting, although this was a more rigorous exercise. After cutting the tyres into desired patterns, creating of holes (provisions for binding the pieces together into a composition) on the cutouts commenced. This was done with a **drilling machine**. The machine was used to bore holes on the cutouts. In situations when there was no power supply, a motorcycle spoke was improvised and used as a bit in boring the holes. The fabricated spoke bit was heated on fire (stove) and used as an alternative to drilling machine. **Staple gun** was employed

in fastening loose ends of the rubber tubes which were used to wrap the wooden frame that act as armature in some of the configurations. Although nails were also used to hold pieces of tyre materials onto the wooden frame; this was only when firmness is required.



Fig. 1 Waste tyres in a stockpile

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### Studio Procedure

The studio project involved different stages and approaches of execution. After gathering the materials, different techniques such as cutting, puncturing, burning, tying, piling, gluing, nailing and colouring were employed. Cutting shapes out was done, depending on the idea or forms to be produced. Some of the tyres were cut into two parts first before they were shredded into smaller pieces or strips, according to the patterns and desired sizes. The cutting of the tyres was followed by the drilling process. Some of the cutouts were perforated with either a power tool or an improvised spoke bit (as explained earlier above). The drilling point on each of the tyre was taken into consideration to avoid mistakes in the compositions. Creation of hole on the cutouts was followed up with the process of tying the drilled pieces together with used copper wire. This exercise was carried out bit by bit. Several pieces were first joined, using copper wire, to create small units which were later assembled to make a composition. This method eases the problem of handling. Thus, parts of a work could be packaged and transported separately only to be assembled together and installed when and where it is required. Apart from joining the cutouts by tying with wire, some were joined by glueing or nailing them together with adhesive or nails. Some works, however, are just accumulations of tyre strips piled up in different ways. Acrylic paints were introduced in some of the works for colour variety and deeper meanings.

## Results

Several works were produced from the exploration. They include *Masquerade* (Fig. 2), *Hunted* (Fig. 3), *Identity* (Fig. 4), *The Unpredictable* (Fig. 5), and *Optimism* (Fig. 6). *Masquerade* is a free standing piece measuring about 180cm high. It is constructed with shreds of inner tubes cut into different sizes and shapes. The work is dominantly black with stains of red and yellow. It appears like a smoked and deflated globe with a large opening at its bottom. Also on a second look it looks like a stand that is covered with a thick dark embroidered table cloth.

*Hunted* is a collection of dead ants fabricated with pieces of inner tubes and wire. In the work, inner tubes were cut into small pieces, folded and tied to create the ants. While the rubber formed the bodies of the ants, the tips of the copper wire used for tying the rubber pieces formed their legs and hands. Each ant is between 4cm to 8cm long. The natural colour of the tube material, as well as the linearity of the copper wire, gives the ants a resonating effect that makes them exist in reality.

*The Unpredictable* is a free standing piece produced with different sizes of rectangular tyre cutouts, ranging from 6cm to 9cm long, with a variety of engraved linear patterns on each of the pieces. The work is designed to spread on the floor, exhibiting pronounced folds akin to an ornamental drapery. This effect gives it a rhythmic visual flow. In fact the composition is an expansive piece that has a regular pattern with apparent transparency that tends to fade away from the viewer. It blends easily with any floor it is displayed on due to the checkered negative spaces that allow patches of the floor to be seen from above the work (see Fig. 5).

Another work produced from the studio project includes *Optimism*. It is constructed on five frames of unequal sizes. It displays different kinds of loops created with long strips of tyre cutouts. The strips are attached to wooden frames already wrapped with bold strips of shredded rubber tubes and then looped from one end of the frame to the other. Of course the looping was done within three of the frames while the remaining two are left to contain empty spaces.

There is the *Identity* also. This piece is wall bound and was created with different patterns of neatly cut motorcycle tyre strips, nailed to a wooden frame. At the upper part of the work, the strips are made to run horizontally within the frame while at the middle, they run half-way, from the right side to the centre. At the left side is a bundle of pieces of wood wrapped and attached to the wooden frame with strips of rubber cut from inner tubes.

## Analyses of Works

Works produced in this exploration stand as visual metaphors which reference man and the environment. *Masquerade* (Fig. 2) reflects the traditional African masquerades which are made up of varied costumes usually created by many hands. In this work patches of different sizes and shapes of rubber tubes are used to represent the contribution(s) of every individual, in one way or the other, in the environmental problems devastating the earth in different ways. In most traditional African societies,

masquerades are regarded as spirits of the ancestors or embodiment of spirit beings. Many of these masquerades cause fear, pain, and even death among the people. *Masquerade* as visual imagery portrays dangers of air pollution and other forms of environmental degradation arising from improper disposal of rubber and petrochemical waste. Like the traditional masquerade, it is expected to create an impression of alarm and provoke a number of questions regarding man's exploitation of nature. The opening under the work, suggest the dangerously depleting ozone layer proven to be caused by the emission of carbon monoxide released in the process of burning petrochemical product particularly.



Fig. 2 *Masquerade* (2013)  
Rubber (inner tubes)

*Hunted* (Fig. 3) portrays an army of dead ants lying scattered around spilled oil-based liquid and remnants of ashes resulted from burnt tyres. The work speaks of the effect of pollution in visual form. Man, ants and, of course every other animal, share the same fate under a threatened environment that has lost its stability due to mismanagement of natural resources and industrial wastes. As a visual statement, *Hunted* is a reflection of the pains and challenges the communities in the Niger Delta and other areas plagued with oil spillage and flaring face. It is a lamentation as well as a protest that calls for urgent and swift action against oil spillage, flaring and disposal of waste in manners that pose health hazard.



Fig. 3 *Hunted* (2013) Rubber (inner tubes) and copper wire

The concept of identity may be perceived as how individual or group of individuals define or locate themselves from the rest. The artist reconstructed the human idea of identity to mean transient values stretching out as influences and counter influences on the character of individuals. In *Identity* (Fig. 4), strips of tyres were stretched out on a wooden frame in an arrangement common to all the strips. The difference in sizes and shapes of the strips do not actually set them apart or make them different. They are products of the same stalk with related characteristics. The idea of identity is intended for division set on the logic of the otherness. But in this work, the supposed difference in the characters of the elements appears to be coded in the *uli* and *nsibidi* symbols at the lower right of the piece, which interpretations could be described as objective or subjective, depending on the position of the reader.



Fig. 4 *Identity* (2014), Tyre, rubber and wood



Fig. 5 *The Unpredictable* (2014), Tyre



Fig. 5b *The Unpredictable* (Detail)

*Optimism* (Fig.5) is a free standing work composed with five partitions three of which framed looped strips of tyre pieces. Two of the partitions are merely enclosed broad spaces that tend to visually ease the tension that appears to build up within the looped areas holding together numerous negative spaces. The patterns of the loops tell a story of entanglement in which different organisms in their natural habitats seem to be entangled in different ways. The changing climate has evolved varied problems that keep making the environment difficult for various species of both plants and animals to survive. The current global discourses on climate change may be seen as human effort at getting the environment free from pollution.





Fig. 6 *Optimism* (2014), Tyre and wood

### Conclusion

In the studio project that this paper reports on, used tyres, tubes, and some plastics, which are all largely petrochemical products, were specifically explored. The project employed these materials so as to raise the issue of waste management which constitute one of the major environmental problems every human environment is faced with. It went beyond highlighting the problems of waste management to demonstrating practically one of the important ways the problems could be solved. The project, which hinged on recycling rubber materials for art forms, yielded thought-provoking concrete results. The content of some of the works produced in the exploration revealed in clear visual language some problems and consequences of improper waste disposals, particularly of disused rubber tyres and tubes. While some of the pieces reference fear and looming death for man, who has found himself entangled in the mess of his vagrant abuse of nature and over-exploitation of natural resources, others, as well as the processes of producing them, metaphorically give him hope.

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