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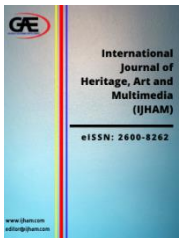

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PLASTIC WASTE THROUGH BIOMORPHIC AND GARBOLOGICAL ART: A STUDIO-BASED INQUIRY

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Abstract:

This research explores the integration of nature-inspired themes with plastic materials, employing both garbology and biomorphic approaches. The study aims to investigate aspects of consumer culture by examining visual form elements and modes of artistic presentation, and how these elements can be critically used to construct visual narratives that reflect consumer culture and its impact on contemporary society. Garbology, the study of waste, serves as the conceptual foundation for examining modern consumer culture and its detrimental environmental effects (Rathje & Murphy, 1992). In the visual arts, this approach offers a critical lens for creatively reinterpreting discarded materials. Meanwhile, the biomorphic approach bridges artistic expression with ecological awareness by emulating the beauty and adaptability found in natural structures (Nurul Asyifa, Yohannes Firzal, and Gun Faisal, 2020). Biomorphic design enables the transformation of plastic waste into artworks that embody aesthetics, symbolism, and ecological consciousness. This study employs a Studio-Based Research methodology, guided by S.P. Gustami's (2007) creative process model, which encompasses the phases of exploration, conceptualization, and realization. The evaluation of the resulting artwork is based on Ocvirk's (2001) "organic unity" model, which examines three core aspects: subject, form, and meaning. The culmination of this research is an artwork entitled *"Dia Masih Di Awang-Awangan"* ("Still in the Clouds"), which visually interprets intricate natural formations merging into a cluster of complex structures. The findings reveal that the biomorphic concept, presented in the form of an assemblage, serves not only as a platform to highlight the grandeur and structure of nature but also reinforces an ecological narrative. By aligning artistic vision with environmental concerns, the artwork becomes a symbolic representation of the intricate relationship between humanity, waste, and nature within contemporary consumer culture. This study contributes to the field of environmental visual arts by presenting a novel integration of garbology and biomorphic design through a studio-based methodology, offering a model for ecologically themed art practice.

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Keywords:

Garbology, Biomorphic design, Studio-Based Research, Plastic Waste, Visual Arts, Environmental Art

Introduction

In this study, garbology is the methodical study of contemporary trash and garbage with an emphasis on how waste reflects societal consumption patterns and behaviors. Garbology is a crucial tool for comprehending resource inefficiency and environmental degradation because it allows one to critically evaluate the lifecycle and impact of materials that humans discard (Rathje and Murphy, 2001). Accordingly, plastic waste represents a contemporary form of refuse and serves as both the subject of analysis and the primary focus of observation in this study. Plastic waste refers to discarded synthetic polymer materials that do not biodegrade and remain in the environment. It contributes to long-term environmental degradation and presents serious ecological risks, such as the contamination of terrestrial and marine ecosystems (Jambeck et al., 2015). In the context of art, in order to create sustainable and aesthetically pleasing products in visual art approach, biomorphic design is a suitable creative process that takes inspiration from the forms, structures, and processes found in nature. By mimicking effective, regenerative patterns found in nature, it seeks to reduce environmental harm (Benyus, 1997). This strategy encourages eco-friendly innovation by imitating nature's tried-and-true methods to foster harmony between built environments and ecosystems. The scope of this study is to investigate aspects of consumer culture by exploring shape and form and modes of artistic presentation, and how these elements can be critically used to construct visual narratives that reflect consumer culture and its impact on contemporary society.

Plastic was once welcomed as an innovative material that greatly reduced the cost of production. Plastic, with its durability, chemical resistance, insulation properties, flexibility, and lightness, continues to be extensively utilized in many industries (Petroliam Nasional Berhad (Petronas), 2019). Among its most striking attributes is that it is inexpensive, making it an unavoidable material (Nur Ruqiyah, 2015). Plastic has become a part of human life since the 1950s (Geyer, Jambeck & Law, 2017). Nevertheless, plastic has numerous drawbacks. Being an inorganic substance, it poses a risk to human health as well as the environment. A significant issue is that it has a lengthy degradation time since plastic has components that degrade in decades or even centuries (Bianchini & Rossi, 2021; Horodytska, Valdés, & Fullana, 2018; Lee et al., 2021). In contrast to decomposing organic matter that re-enters its natural habitat, petroleum-based plastics are impervious to the microorganisms facilitating biodegradation. Thus, such plastics remain in the environment for very long durations and produce long-lasting ecological effects (Browning et al., 2021; Gunjan et al., 2021; Napper et al., 2022 in Muhammad Fauzan Abu Bakar et al., 2023; Hanif & Marzuki, 2006).

Artists perceive, interpret, and engage with plastic in its intricate relationship with human activity, waste, and the environment. As agents of change, they go beyond merely producing art and they use their work to challenge society's perception of waste. Art that incorporates plastic defies conventional aesthetic norms while critically examining consumerism and the cultural and lifestyle complexities of modern society. In doing so, it transcends its physical composition, acquiring meaning beyond its material form. Sidi Gazalba (1977) describes art as

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a process of making something pleasing, while Read (1959) asserts that enjoyable art fosters appreciation by establishing a connection between the artwork and its audience. Art made from recycled plastic not only reinterprets artistic conventions but also prompts viewers to reflect on contemporary consumer lifestyles through an ecological lens. As noted in Garbology: The Archaeology of Contemporary Trash (Duneier, 2004), waste especially plastic reveals the values and behaviors of society. By transforming discarded materials into art, deeper social and environmental concerns come into focus, encouraging reflection on both individual responsibility and larger ecological issues. Drawing inspiration from nature, such art reinterprets the relationship between humans and the environment while contributing to academic discussions on nature and plastic as a material.

Due to this, creative activities planning needs an architectural framework that is dependent on the features and shapes of living things. The most suitable way for this research is biomorphic design-aesthetic approach using or copying the shapes of nature (Nurul Asyifa, Yohannes Firzal, Gun Faisal, 2020). Biomorphic art has its origin in the pre-20th-century Surrealist and Abstract Expressionist movements where artists Roberto Matta and Joan Miró had been inspired by organic processes and forms (Robins N.R., 1976). Biomorphic principles added to this kind of art help develop higher levels of ecological awareness, establishing an affirmation of interdependence between art, nature, and human conservation.

Referring to previous studies, despite the growing interest in the use of waste materials, such as plastic waste, in visual art as a sustainable approach, there is a lack of studies that specifically incorporate biomorphic principles in the interpretation of this artistic material. Most research focuses more on the recycling aspect or the social messages related to pollution, without exploring the potential of biomorphic design as both an aesthetic and conceptual strategy to assign new value to waste materials. For example, a study by Reiderer (2018) examines the use of discarded plastic in art as a critique of environmental pollution but does not directly consider a design approach based on natural forms. Similarly, a study by Gabrys (2013) emphasizes the ecological dimension of waste in the context of art, but does not focus on the principles of biomimesis in visual creation. Therefore, there remains significant space to explore how plastic waste can be reinterpreted through biomorphic methods in visual art is not merely as a medium, but as a visual language that expresses the relationship between humans, nature, and contemporary waste.

Research Problem

The widespread application of plastic is driven by its multiple advantages based on its convenience, strength, lightness, pliability, cost-effectiveness, and availability. As societies evolve, there are commodities that come to symbolize the contemporary lifestyle, and plastic has been a symbol of the modern way of life. However, unlike natural goods, plastic does not biodegrade; it prevents microbial degradation and merely changes form when heated, allowing it to be remolded and recycled without compromising its inherent properties (Hanif & Marzuki, 2006).

Even though its form is seemingly modern (Fong et al., 2020), plastic is derived from natural resources such as oil and natural gas, undergoing extensive chemical processing. While organic substances decompose and go back to nature, plastic persists, representing a feeling of permanence in nature (Liu et al., 2022). In the context of art, using plastic to imitate natural shapes can significantly influence environmental awareness (Rees, 2018). Hence, the problem

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addressed in this study is to explore how plastic waste can be reinterpreted through biomorphic methods in visual art is not merely as a medium, but as a complex visual language that expresses the relationship between humans, nature, and contemporary waste.

Literature Review

The study of plastic as an art medium is frequently associated with ecological concerns, artistic concepts, Garbology theory, and the biomorphic mode. Garbology, an anthropological concept, studies waste as a classifier to reveal human behavior patterns and their effects on the environment (Rathje & Murphy, 1992). Translated to art, this theory extends to the recycling of discarded plastic materials as a critique of consumerism and pollution. For instance, Maher (2017) discusses how artists employ recycled plastics to develop sculptural installations to engage with society's habitual dumping of usable resources. Specifically, biomorphic approach borrows strongly from organic structures and shapes based in nature. Embedding biomorphic elements within plastic artworks allows the artists to build a close correlation between plastic pollution and the vulnerability of nature beauty (Smith et al., 2015). For instance, Aurora Robson transforms waste comprising plastic into sculptures resembling ocean animals, depicting the threat posed by plastic pollution to sea life well. Prior research highlights the combined strength of Garbology and the biomorphic approach in shaping art narratives. Art works that combine the two approaches not only educate about plastic pollution but also inspire controversy regarding human moral responsibility towards nature. Gregory (2018) examines how the aesthetic and emotive worth of plastic-derived biomorphic forms is applied as a symbol of endangered life and sustainability, inspiring heightened reflection on environmental issues. Previous artworks and studies that employ garbology and biomorphic approaches in the field of visual arts can be referred to in El Anatsui's work "Earth's Skin" (2007), which utilizes aluminium bottle caps and other discarded materials to create large-scale textile-like art that addresses issues of colonialism and modern waste. Another is Ernesto Neto's "Leviathan Thot" (2006), an oversized installation with organic shapes that recall the shape of the human body or the cells of a living creature. His work engages and stimulates the senses and provokes a bodily relationship with nature. In conclusion, the literature identifies that plastic in Garbological and biomorphic art is not just environmental activism; it advocates for a new paradigm in society's perception and engagement with waste. These studies offer a good foundation for further research on the role of contemporary art in addressing issues confronting the world today.

Methodology

This artistic research employs a studio-based approach, following S.P. Gustami's (2007) creation model, which comprises three essential stages: exploration, planning, and realization. This structured process ensures that the resulting artworks are not only visually captivating but also conceptually significant and aligned with the intended themes.

The first stage, exploration, involves generating ideas and drawing inspiration through theoretical studies, material experimentation, and environmental observations. This phase enables artists to identify key themes or issues to address. Common exploratory methods include visual analysis, art historical research, and the study of natural or social dynamics. Within this study, which incorporates Garbology theory and biomorphic aesthetics, exploration may involve examining plastic waste, organic forms, and the interactions between human activities and nature. This stage helps artists grasp both the conceptual direction of their work and the potential of their chosen medium.

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The second stage, planning, focuses on structuring the artwork. At this point, the artist selects materials, creates sketches or prototypes, and devises strategies to realize their concept. Gustami (2007) emphasizes the importance of this stage in maintaining coherence between theme, medium, and message. For example, an artist designing a biomorphic sculpture from plastic waste must carefully plan how to manipulate the material into organic forms while keeping environmental concerns in mind. Documentation is also a vital component, serving as a record of artistic decisions and process development.

The final stage, realization, entails the physical execution of the artwork. This phase involves applying artistic techniques and material manipulation as envisioned during planning. However, flexibility is crucial, as adjustments may be required to address technical or aesthetic challenges. Elements such as texture, color, and form are refined to create a visually striking and conceptually meaningful piece. For instance, when working with discarded materials, the transformation of "worthless" waste into carefully crafted art can evoke critical reflection from viewers.

Overall, Gustami's model offers a structured yet adaptable framework that balances creative experimentation with systematic methodology, ensuring that artworks are both aesthetically compelling and thematically profound.

The analysis of artworks in this study relies on Ocvirk's model of organic unity (2001), which evaluates art on the three basic criteria of subject, form, and meaning. The subject acts as the main point or issue that the artist intends to convey. Form, on the other hand, refers to visible constituents involving composition, color, line, texture, and shape that provide beauty and expression for the work of art. Meaning deals with the interpretation or more profound message derived from the work, often concerning human life, cultural values, or social and environmental issues. The three components are united in this model, combining to create a work of art that is whole and harmonious. Therefore, under this view, it is evident that whenever artistic expression has the most power is when the subject, form, and meaning unite together to render a piece not just visually arresting but equally stimulating to the mind.

Findings

"Dia Masih Di Awang-Awangan" (Still in the Clouds) is a 2023 artwork measuring 182.88 cm by 243.84 cm, created using discarded plastic and incorporating concepts from both garbology and biomorphic art. This analysis examines the piece through three key components which are subject, form, and meaning—based on Ocvirk's (2001) model of organic unity.

Subject: The artwork explores the intricate relationship between humanity, plastic waste, and the natural environment within the framework of modern consumerism. Plastic, a symbolic representation of pollution and environmental degradation, is artistically transformed into a biomorphic structure resembling organic elements such as flora and fauna. By repurposing discarded plastics, the work elevates seemingly insignificant materials into a meaningful artistic statement, addressing global concerns about plastic pollution (Haward, 2018).

Form: Visually, the piece exhibits harmony through principles of balance, repetition, and rhythm. The biomorphic shapes and forms, reminiscent of flower petals and bird scales, create a dynamic and engaging composition. A vivid color palette including orange, pink, white, turquoise, red, blue, green, and yellow symbolizes vitality and energy. Additionally, the three-

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dimensional effect, achieved through the layering and folding of plastics, enhances the texture and depth of the artwork. This technique demonstrates that even waste materials can possess aesthetic value, reinforcing the idea that art has the power to transform and redefine material worth (Krauss, 1979).

Meaning: The artwork serves as a critical commentary on the relationship between humanity and the environment, highlighting the impact of modern consumer culture. By incorporating garbology, the piece critiques consumerist wastefulness while advocating for creative recycling as a means of reducing pollution (Thompson, 2017). Meanwhile, the biomorphic approach enhances the connection between viewers and nature, symbolizing the fractured relationship caused by human exploitation of natural resources. Together, these elements create an artwork that is not only visually compelling but also rich in ecological and philosophical significance.

Biomorphic art not only presents a unique aesthetic experience but also serves an ecological function, acting as a symbolic bridge between human behavior, waste, and nature. This aligns with the findings of Boudry et al. (2021), which emphasize the role of recycling awareness in mitigating environmental harm while enriching human creativity. Ultimately, *"Dia Masih Di Awang-Awangan"* challenges the viewer to reconsider their relationship with artificial materials and their impact on the natural world.

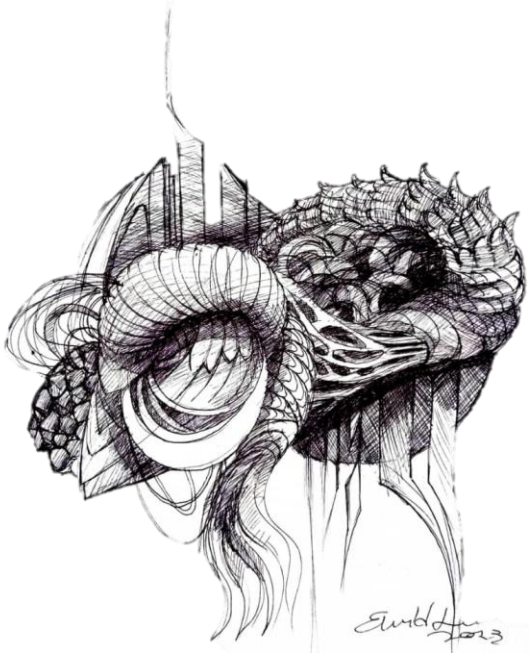

Figure 1: Drawing plan, entitled *"Dia Masih Di Awang-Awangan"*, 2023.

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Figure 2: Studio Process ((No.1) Collection and Cleaning, (No.2) Cutting, Shaping and Forming, And (No.3) Coloring)

Figure 3: Ehlid Luli, *"Dia Masih Di Awang-Awangan"*, 2023, Plastic & Mix Media On Playwood, 182.88 Cm By 243.84 Cm (6fts X 8fts).
Source: National Art Gallery https://www.youtube.com/watch?v=APqBdMjIgSc

Conclusion

"Dia Masih Diawang-Awangan" is a multifaceted interaction among human beings, plastic waste, and nature in the age of modern consumerism. Through the synthesis of garbology and biomorphic art, waste such as plastic waste is transformed into visually compelling and intellectually stimulating works of art. Not only does this creative process illustrate the potential for transforming waste into beauty, but it also serves as a commentary on pollution and environmental degradation as it pertains to consumer culture. Ocvirk's (2001) organic unity

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principle emphasizes how form and content that are highly interrelated inspire contemplative artistic expression. In this case, the artwork is encouraging ecological awareness while respecting the aesthetics of nature. By redesigning the value of waste material, the project fosters sustainability and a more conscious human-nature connection. While, this study contributes to the field of environmental visual arts by presenting a novel integration of garbology and biomorphic design through a studio-based methodology, offering a model for ecologically themed art practice.

Future research can include using digital technologies such as augmented reality or interactive installations to advance the biomorphic and ecological subject matter in the artwork. These advancements would heighten audience engagement, deepening their immersion and strengthening the environmental sustainability message.

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