Documentary Cinema, Plastic Waste Problem, and Environmental Sustainability: the Case of Pulau Plastik

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Abstract. Cinema, particularly documentary, can be a powerful vehicle for raising awareness of environmental sustainability. In the paper, the documentary film *Pulau Plastik* (Dandhy Laksono and Rahung Nasution 2021) is the subject of analysis. The film has its premiere at the end of April 2021 in the cinema theatre in Jakarta, Yogyakarta, Surabaya and Denpasar and shows the plastic waste and its environmental damage. The documentary uses mise-en-scéne in its plot to evoke certain experience and emotion of the audience which we will examine its role and its psychological impact with the texts of the French philosopher Maurice Marleau-Ponty in the *Philosophy of Embodiment*, American experimental psychologist James Gibsons in *Ecological Perception* and American philosopher Sue Cataldi in *Feelings, Depth and Flesh*. The directors also use Cinéma Vérité Approach to strengthen the effect towards audience.

1. Introduction

Environmental sustainability is very important in order to maintain a sustainable society. One theory says that the concept of sustainability has three important elements, which are the environment, the economy, and society. Other mentions the dualism kind of relationship between humans and the ecosystem. However, both theories agree that “clean air, clean water, and clean and productive land is foundational to a responsible socioeconomic system”. Several actions are needed to overcome threats against ecological harmony and maintain sustainable socio-economic system [1].

In Indonesian context, one of the biggest environmental problems is plastic waste. Indonesia is the second largest plastic waste producer in the world. [2]. One of the attempts to overcome the problem is by reducing the use of plastic in daily life and replacing it with an eco-friendly material.

Table 1. The top 20 countries ranked by mismanaged plastic waste (in units millions of metric tons per year) [2].

| Rank | Country  | Plastic Waste (in millions) | Plastic Waste (in kg/yr) | Plastic Waste (in MMT/year) |
|------|----------|-----------------------------|--------------------------|---------------------------|
| 1    | China    | 262.9                       | 1.10                     | 11                        | 76                       | 8.82                      | 277                      | 1.32–3.53                |
| 2    | Indonesia| 287.2                       | 0.12                     | 11                        | 83                       | 3.22                      | 10.1                     | 0.40–1.29                |
| 3    | Philippines| 63.4                     | 0.15                     | 13                        | 86                       | 1.68                      | 5.9                      | 0.28–0.75                |
| 4    | Vietnam  | 56.9                        | 0.79                     | 13                        | 88                       | 1.63                      | 5.8                      | 0.28–0.75                |
| 5    | Sri Lanka| 34.6                        | 0.1                        | 7                        | 84                       | 1.29                      | 5.0                      | 0.24–0.64                |
| 6    | Thailand| 28.0                        | 1.2                      | 12                        | 75                       | 1.03                      | 3.2                      | 0.15–0.41                |
| 7    | Egypt    | 21.8                        | 1.37                      | 13                        | 69                       | 0.97                      | 3.0                      | 0.35–0.99                |
| 8    | Nigeria | 22.3                        | 1.52                      | 11                        | 57                       | 0.94                      | 2.9                      | 0.24–0.37                |
| 9    | Turkey   | 22.3                        | 0.83                      | 9                         | 89                       | 0.79                      | 2.5                      | 0.12–0.33                |
| 10   | Bangladesh| 17.9                      | 0.67                      | 6                         | 86                       | 0.63                      | 2.0                      | 0.59–0.95                |
| 11   | South Africa| 12.9                     | 2.0                      | 12                        | 56                       | 0.66                      | 2.0                      | 0.59–0.95                |
| 12   | India    | 10.5                        | 0.34                      | 3                         | 87                       | 0.60                      | 1.9                      | 0.09–0.24                |
| 13   | Algeria  | 11.5                        | 1.2                      | 12                        | 60                       | 0.52                      | 1.6                      | 0.03–0.23                |
| 14   | Austria  | 34.0                        | 1.77                      | 12                        | 88                       | 0.49                      | 1.5                      | 0.07–0.19                |
| 15   | Pakistan | 34.6                        | 0.79                      | 13                        | 88                       | 0.48                      | 1.5                      | 0.07–0.19                |
| 16   | Brazil   | 74.7                        | 1.03                      | 16                        | 11                       | 0.47                      | 1.5                      | 0.07–0.19                |
| 17   | Slovenia | 10.5                        | 0.44                      | 17                        | 68                       | 0.46                      | 1.4                      | 0.07–0.18                |
| 18*  | Morocco  | 17.3                        | 1.46                      | 5                         | 68                       | 0.31                      | 1.0                      | 0.05–0.12                |
| 19   | North Korea| 17.3                      | 1.46                      | 9                         | 90                       | 0.31                      | 1.0                      | 0.05–0.12                |
| 20   | United States | 12.2                  | 2.58                      | 13                        | 2                        | 0.28                      | 0.9                      | 0.04–0.11                |

*Table data includes only countries that produced at least 10 million metric tons of plastic waste per year. Other countries may be included in the list.*
On the other hand, films are considered to be a vehicle to increase public awareness and even propaganda to campaign certain issues. Some researches highlight that cinema is an efficient vehicle for classroom learning and can be beneficial for the students to get the message and eventually raise the awareness of particular issues. This also applies to the discussion of films regarding environmental issues as well as plastic problems [3].

One of the films critically discussing ecological issues is *Pulau Plastic* (Plastic Island, 2021), a “road movie” documentary directed by Rahung Nasution and Dandhy Laksono. The plot of the documentary with 102 minutes of film length follows three main protagonists, which are the environmental activists, namely Gede Robi (vocalist of Bali-based rock band Navicula), Tiza Mafira (a young lawyer from Jakarta), and Prigi Arisandi (a biologist and river guard from East Java), in tracing plastic waste. All of them want to find out the effect of plastic waste on the environment and the extent to which plastic waste has infiltrated the food chain and its impact on human health, and what can be done to stop it.

The three protagonists want to learn how harmful the plastic waste on animals in the river and ocean and whether it can actually reach human’s food chain. The cinema spectators follow their investigation. One of the protagonists, Tiza, tries to bring their acquired knowledge on a political level by banning the use of single-use plastic in Indonesia.

One of the key moments is when we, as spectators, see how the microplastic in the fish meat was discovered during a laboratory examination, and subsequently was found in the human excrement as well. This text will examine the plot strategy of the documentary film *Pulau Plastik*, in which *mise-en-scène* (a French term for “everything put on screen”) is used to influence viewers' perceptions, particularly these key moments.

2. Methodology
In this paper, we will use textual analysis. This method considers film as the text while the researchers "read" the elements of particular films by using particular perspectives or frames. In this paper, the authors try to read the film being analysed using environmental issues, namely the use of *mise-en-scène* in the film to influence spectators’ perception on daily plastic use.

Particularly, the paper will apply phenomenological and the perception theories of Marleau-Ponty, James Gibson and Sue Cataldi to understand the role of *mise-en-scène* in the documentary cinema *Pulau Plastik* especially in evoking spectators’ physical and emotional viewing experience and eventually raising awareness on daily’s plastic use.

The paper will focus on the analysis of *mise-en-scène* in key moments, particularly three continuous key scenes: The Microplastic in the Milkfish (Figure 1), The Consumption of the Milkfish (Figure 2), and the Micro Plastic Particle in in the human excrement (Figure 3).

In short, *mise-en-scène* is everything which are visible and audible on screen such as production design, film set, hair and make-up, the actor’s acting, actor’s lines etc.
Figure 1. The Microplastic in Milkfish [4].

Figure 2. The Consumption of the Milkfish [4].

Figure 3. The plastic particle in in the human excrement [4].
The two directors show through mise-en-scène the examination and consumption of the milkfish directly in front of the camera so that the images can be visually perceived by the viewer. These images are processed in the body by the spectator and fused with his own already embodied experience such as the memory of fish consumption. Then different feelings are evoked which we understand as affect. The viewers experience emotionally the tangible threat of plastic waste in their bodies and begin to think about their consumer behaviour and how they deal with plastic. We want to analyse this complex process with the phenomenology theory approaches of the philosopher Merleau-Ponty, extended with ecological perception by psychologist James Gibson and the aesthetic theory of philosopher Sue Cataldi.

The researcher watched the film premiere at the end of April 2021 in a cinema theatre in Jakarta and used some footages from the movie trailer for this paper.

3. The visual perception in cinema and the affect
Maurice Marleau-Ponty belongs to an exponent of phenomenology, which deals with the theories of gaining knowledge of the subject about the world. He overcame the dichotomy between the mediating mind (the intellect) and the mediating body (the empiricism) in gaining knowledge about the world and instead included the third mediating entity namely the body in his central philosophy.

“Truth does not inhabit only the inner man, or more accurately, there is no inner man, man is in the world, and only in the world does he know himself.” [5]

American Philosopher Sue Cataldi extended the Merleau-Ponty concept of the Perceiving Body to emotional experience. She took the thesis of Gibson that perception is always an environmental process. That means that the perception of a body always relates to the ground: what a body does and feels in relation to the ground [6]. Then she summarized that perception and embodied experience always have an affective dimension. According to experimental psychologist James Gibson visual perception always involves two aspects, namely the self (the subject) and the environment [7]. These two aspects can be understood in the sense of watching a movie in the cinema: the environment is everything that is present on the screen and the self is the embodied experience of the viewers [8]. During the perceiving, the boundary of the two aspects is blurred and they intertwine. In short, viewers perceive the images on the screen and the images intertwine with their own embodied memories, in which the viewers' emotional world is also inherent [8]. This process is an affective experience for the audience.

The researchers will apply the theories from both philosophers, particularly the bodily viewing experience to evoke certain emotional experience in order to evoke the awareness of the dangerous plastic problems and might lead to particular actions and force them to rethink of their perception on the issue, and eventually prevent them to worsen the condition.

4. The Film plot strategy
To evoke the affective experience in the audience, the two directors have developed a plot strategy in which they use mise-en-scène. They went to Porong River, where there stands a tofu industry which uses a cheap dried rubbish as its fuel, and throw the waste into the river, thus causes water pollution.

In the first key scene (Figure 1), the two main protagonists, Robby and Prigi buy milkfish at a kiosk. The fish have been cultivated in fish bakes, where the water comes from Porong River in East Java, which is heavily polluted by plastic waste. The protagonists, then take the fish to a lab technician, and during the examination they find out that in each fish meat microplastics average in the range of 150 mg, a sum that is up to seven times greater than the scientists from University of Vienna have discovered in the south water fish of Danube river [9].

Another mise-en-scène use, the next scene, is when the Roby subsequently thinks of performing an experiment in which he has the fish, taken from the same source as Figure 2, fried and then eats them
(Figure 3). Later on, he hands over his excrement to the lab technician. A day later, the results come out, and the lab technician shows Robby a picture of the microplastics in his excrement (Figure 3). From the explanation, it is informed that the microplastics should be responsible for the health problem such as allergy, kidney failure, and cancer. In the dramaturgical structure of the film, we can consider this scene as the first plot point and as a "point of no return" of the protagonist. The tension of the film increases rapidly until the climax, because the audience feels affected with the fate of the film main protagonist Roby.

From now on, the plastic waste threatens Roby, and the audience as well. Robby and Prigi continue their journey and meet with other environmental activists in Yogyakarta. They continue to do the microplastic test and discover the similar result. This is the climax of the film in the dramaturgy curve, which shows their frustration and powerlessness against this bitter fact of microplastic findings in the human bodies.

They continue their journey until they arrive in Jakarta, joining a mass demonstration against the single-use plastic consumption organized by the third main protagonist Tiza. As the turning point the film shows their success to organize a demonstration which was attended by more than 1000 people in the central of Jakarta and the event was covered by mainstream media. The film ends with the protagonists returning to their town and to their family. Roby and Tiza are playing with their child in their house despite the danger of microplastics are still threatening the human life.

In the key scenes, directed in a tense tone, the audience is forced not only to concern about protagonists’ well-being and health, but also at the same time to feel the way the protagonists feel: disgust, threatened by plastic waste inside their food, concerned about their own health.

5. Cinema Verite as the Supporting Vehicle
Not only using *mise-en-scène* in its dramaturgy in key scenes, the directors also use cinema verité approach to strengthen the effect of physical and emotional experience. According to the Cinéma Vérité, the interventions of director into the world of protagonists are needed and even required to expose the invisible truth [10].

Applying cinema verité style, the film uses the hand-held camera and visible intervention by the directors as in the interview, suggests to the viewers that they are directly in front of what is happening in space and time. With the shaky and raw filmmaking approach, audience could be engaged to see, hear, and feel what is happening, to feel more real. Thus, to make them closer to the reality. The invisible intervention of the director according to this analysis is in the use of *mise-en-scène*.

In order to create the dramaturgy structure with tension and to influence the visual perception and feelings of the viewers so that they can feel emotionally involved in the film: the scene of microplastic discovery in human excrement was most likely very purposefully planed in advance by the two directors. This narrative strategy belongs to the Cinéma Vérité attitude in contemporary documentary practice as well.

The laboratory investigation scene in which microplastics were discovered in the Robi’s excrement finally serves besides benefiting the film's tension to influence the viewers' perception and feelings. The viewers begin to question his own plastic consumption behaviour which generally has been increasing rapidly since the pandemic of Covid-19 [11] and they might probably perceive the consumption of fish from the river or sea differently after their cinema experience of *Pulau Plastik*.
6. Conclusion
The documentary *Pulau Plastik* (2021) is a good example of how to do campaign to ecological sustainability. The directors depict the journey of three protagonists to investigate the extent plastic waste can threaten human’s health. As elaborated above, by using *mise-en-scene*, supported with cinema verité approach, particularly on the thrilling key moments, which are three continuous scenes, the audience undergo both haptic and emotional experience. Therefore, the spectators are expected to feel the way the protagonists feel after finding out that the microplastics were inside the milkfish—taken from heavily polluted river—and in human excrement: disgust, threatened, concerned about health, and rethinking the food safety. In conclusion, regarding the cinematic strategy, both *mise-en-scene* and cinéma vérité, successfully evoke certain emotional cinematic experience to some viewers.

Through the phenomenological and perception theory of Marleau-Ponty, James Gibson and Sue Cataldi we can analyse the sensorial and intellectual process on the audiences during the film screening. Therefore *Pulau Plastik* (2021) has lots of potential to transfer the knowledge, huge possibility for the audiences to rethink of their previous perception on the topic and increase more awareness about the ecology threat of micro plastic. The film has made the issues closer to daily concerns, since the threats are penetrating human’s food chains. Therefore, since the audience became more aware, more self-reflexive, and more self-concerned on the issue, it is hope that the documentary can potentially prevent the audience to worsen the situation starting from themselves. The author, as one of the audiences, was successfully provoked by the film and force to rethink the issue as well as being self-concerned that the ecological threat was so close and real.

However, this paper focuses more on the textual analysis as already described in the methodology part. We suggest that the film screenings in the future should be accompanied by discussions with the environmental experts and environmental-related Non-Governmental Organizations to make the impact and awareness stronger in reducing the one-way plastic usages and to strengthen the ecological movements which support the sustainability of natural resources. In addition, further research is needed to find out more about the influence of the film on the audience’s perception and how far the film raises their awareness and change their behaviour regarding the daily plastic usages.

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