

Designing Lighting in an Animated 3-Dimensional Film Adapted from a Children's Story by Monica Wihardja (Case Study: "Marapu dan Kampung Tarung")

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Abstract. The issue of discrimination is an issue faced by a multicultural country like Indonesia. One form of discrimination is religious discrimination. Such acts of discrimination are still experienced by some religions or broad beliefs in Indonesia, one of which is Marapu. Marapu is a traditional religion adhered to by the people of Sumba. Therefore, this issue was raised in the form of a short 3D animated film, with the aim of raising the public about the issue of religious discrimination that is still happening in Indonesia. The content of the children's storybook entitled Marapu dan Kampung Tarung and the cultural context of Sumba were used as the basis for the concept. Meanwhile, the keywords are enlightened and heavenly as a visual reference. In this paper, the lighting aspect will be used as a case study in bringing the issues of discrimination, theology, and cosmology from Marapu's teachings into a short 3D animation.

Keywords. Discrimination, Marapu, Sumba, Animation, Lighting.

1. Introduction

A multicultural country like Indonesia has religious and diversity issues that deserve to be discussed [1]. Unfortunately, this religious issue often becomes a background for discrimination that leads to violence. The issue of discrimination is experienced by the people of Sumba, who adhere to the traditional religion, *Marapu*. Soeriadiredja said Christians in Sumba had received the "green light" for their insults. This is due to the legitimacy of the state stating that Marapu adherents are "not yet a religion" because they are not registered as "official religion". Not only adults, small children are also affected by this issue. Soeriadiredja said that the church-sponsored education system left students with no choice but to change their religion to Christianity. So it means that children in Sumba have been exposed to the issue of intolerance since their childhood. This makes learning the concept of tolerance for children important as they grow and learn [2].

In the learning and growth process, a means or medium is needed that can convey this message. Yücelyiğit explained that visual experiences such as animation are a medium that has a positive impact on the development and learning of a child [3]. Maria Monica Wihardja and her team, in 2017, created the book *Kisah dari Sumba*, a children's story that contains the values of religious tolerance. He also said that the story "Marapu dan Kampung Tarung", one of the stories in her book, not only provides information

about the *Marapu* religion but also aims to raise the issue of bullying and religious discrimination that occurs in Sumba. However, the children's story must be converted into a film format through adaptation which changes one art form to another. Therefore, an adaptation of the story "Marapu dan Kampung Tarung" from a book entitled *The Story of Sumba* into a short 3D animation entitled *Meha Anakiada Marapu*.

This paper will specifically discuss the use of lighting, one of the aspects of animation, in addressing the issue of discrimination. Starting from the character lighting, place setting, time, to *Marapu's* theological and cosmological concepts. Using the book by P. Jasmine Katatikarn and Michael Tanzillo, titled, *Lighting for Animation: The Art of Visual Storytelling* as the main reference in designing *Meha Anakiada Marapu* from a lighting aspect. In simple terms, *Meha Anakiada Marapu* is a story that tells of a child born in Sumba named Meha. On a daily basis, he experiences "different" behaviors because of something he holds and believes in, namely the religion of his ancestor, *Marapu*. Being in the minority and "being a child" meant that he couldn't do much. However, thanks to her mother's prayers and her ancestors' help, Meha was given the strength to overcome these trials.

2. Method

In the book *Lighting for Animation: The Art of Visual Storytelling*, Jasmine explains that lighting for animation can become a work of art in itself [4]. As in looking at a painting, someone when viewing an animation can dissect the division of "tasks" of each artist. Like when the viewer sees a 3D model, he can judge the object made by a modeler. Meanwhile, watching the gestures and animations of the audience can see that it is moved by the animator. In contrast to the two, lighting, as with scoring in music, operates at a level that is deeply psychological. Audiences generally do not identify each individual light or even notice consciously at what time the scene occurs. Conversely, the audience feels and reacts to lighting unconsciously. Jasmine also explained that in telling a story, a lighter should have three main goals. The first goal is directing the viewer's eye. This can be achieved using luminance, color contrast, and other things to help emphasize action in a scene. The second objective is Visual Shaping, to create visual interest through the shape of an object. Then the third and final goal is, a lighter has a responsibility to help the mood or Emphasizing the Mood. This third objective is important because Jasmine emphasizes that the artist's goal in animation is to convey a story. So it is not surprising that conveying the mood has significant weight in an animation.

In the making of the 3D animated film *Meha Anakaida Marapu*, the method used is a combination of Landa's design process stages and Beanne's 3D Production Pipeline stages. This stage displays the thought process in making a design which is divided into five stages, namely Orientation, Analysis, Conception, Design, and Implementation. The Orientation stage which carried out the formation of a team, library data collection for data about *Marapu*, natural conditions, traditions, and culture, and interviews to obtain data about the story of Sumba and Sumba cultural practitioners. The analysis stage is carried out to determine the big issue, namely the issue of religious discrimination, and to determine the target audience, namely children aged eight to 10 years. Conception is the process of finding references, adapting stories into scripts, characterizing characters, and mapping concepts to determine keywords. Then it is continued by the Design stage, which contains the storyboard, character design, and environmental design. Then it was ended by Implementation which contained, layout, modeling, animating, lighting, rendering, compositing, and editing.

3. Results and Discussions

3.1 Application of Light to Character

In the story of *Meha Anakiada Marapu*, enlightened is one of the visual keywords used in this project. The word enlightened itself was chosen after going through an exploration of the word from *Kabihu* which

means kinship and freeman. The word enlightened has the meaning of being freed from ignorance of misinformation towards the truth [5]. This can be associated with the story of Meha who was enlightened or freed from discrimination. The American Psychological Association (APA) explains that one of the stages in overcoming discrimination is to focus on the core values, beliefs, and strengths that a person feels in order to motivate someone to be successful [6]. In other words, Meha must continue to believe in his core beliefs, namely, the *Marapu* religion he adheres to, in order to face or be "independent" from the acts of discrimination he experiences.

The enlightened concept of lighthing, is visualized by using several properties of lighting and shadows, beginning with light and shadow colors. The animation, *Meha Anakiada Marapu*, uses a color scheme found in the Sumba Barat logo and through their traditional fabric that is inspired by their paddy fields [7]. Their fields represent success and prosperity, as it is their source of income and gives them life. The color blue is symbolic of the sky and earth [8] and the color purple, according to Seokanto, has meaning in fortitude [9]. Both colors also share meaning in the traditional Tenun fabric of Sumba. These colors are used by the light to complement the scene, in order to best complement the character and environment within. Figure 1 best visualizes yellow lighting with the character Meha, who has a blue headband in order to complement each other.



Figure 1. The use of light properties in the film *Meha Anakiada Marapu* (Author, 2021)

The second property used is light intensity. In CG lighting, the comparison between the main light or key light and the fill light or fill light is called the key to fill ratio. In this project, focus on using two key to fill ratio techniques, namely high key, and low key. With low keys that have finer shadow characteristics, and insignificant light intensity differences. While the low key has the characteristics of a higher key light value, which provides clearer shadow details. In this project, high key and low key, are used in a way to represent the enlightened process itself. It starts with the character Meha who wears high key lighting (see Figure 1) which makes the image less assertive and the details blurry. Then slowly become low key (see Figure 3) with a sharper shadow, representing Meha's strengthened faith.



Figure 2. Christian figures who have a higher light intensity and specular which gives a "bright" impression (Author, 2021)

Then the last property of light or shadow discussed in this paper is, Artistically Position Shadow. Jasmine explains that Artistically Position Shadow is when a lighter positions a shadow, for the sake of a concept or composition of a story. In this project, the shadow is used to 'separate' the character of *Marapu*, namely Meha, and the other characters, namely the antagonist who in this case are Christians. With the character of Meha being constrained in the shadows, and the character of "Christian" being covered in light (see Figure 1 and Figure 2). Throughout the animation, you will find shadows that are used as compositions, whether it is a split composition, third rule, harmony triangle, and other compositions. With the intention of emphasizing the character who adheres to Marapu who is being oppressed. One of the uses of this concept can also be seen in Figure 3. In this scene, Meha's character is told who is trying to help the antagonistic character, namely Tanto, but Tanto rejects his help and makes Meha fall. In this scene, Tanto's character pushes Meha's character 'into the light', or the part that is exposed to light. It is a subtext that describes the character of Meha who due to external pressure made him fall into "light" (in the teachings of Marapu, the darkness that reflects purity, in contrast to Christian teachings). This makes Meha's character question the ancestor's protection and makes him abandon his beliefs.



Figure 3. Tanto, the antagonist, is pushing Meha to fall into the "light" (Author, 2021)

3.2 Application of Light to Marapu's Theology

As previously explained, one of the keywords of this film is enlightened which is dominantly reflected in the characters. The second keyword, is heavenly, which comes from Marapu or belief. These keywords are used in the visualization of Marapu, especially the concept of theology and cosmology. Maria states that the *Marapu* belief has the concept of *amahgolo-inaamarawi* (a father who weaves and a mother who makes), which is the conception of the existence of the 'divine' who creates the universe in which all living things live [10]. The 'divine' figure is a unity, and consists of *Miri Mawulu Tau Maji Tau* (God the creator and maker of man), *Ina Pakuwurungu-Ama Pakawurungu* (mother of the universe), and *Ina Mbulungu-Ama Mbulungu* (one Mother and Father Esa).

Maria also explains that this divine figure is at a very high and distant place. Therefore, after going through some exploration, this divine figure is embodied in such a large form, and is underpinned by a form that resembles outer space. While the choice of blue light emitted from this figure is part of the visual concept of this project. In this scene (see figure 4) Meha is having a spiritual experience after he 'falls' from his beliefs. In Sumba, the color purple and blue means having a sense of firmness and strength. So that in this scene, in addition to giving an unnatural impression, blue also represents the 'divine' figure who is recreating and strengthening Meha's character in the faith he has.



Figure 4. The 'divine' figure in Marapu is depicted by outer space (Author, 2021)

3.3 Application of Light to Marapu Cosmology

Continuing the discussion about creation, in Marapu's teachings, the heavens and the earth were created by a creator who consists of eight layers of earth and eight layers of heaven. The sky layer, or heavenly layer, consists of four dark layers and four-light layers. With that understanding, a place that is getting darker also symbolizes a place that is getting holier. These eight layers reflect the process of human creation, with Marapu being the first ancestor. Starting from the first layer to the eighth layer, Marapu walked down to the world, with the help of the divine. These layers have their own characteristics that are visualized in this project. By following the color scheme of this project, this layer is divided into 2 main parts, namely dark and blue (as in figure 4) and bright yellow (see figure 6). However, in the middle of these two parts, there is a transition in the fifth layer (see figure 5) which contains crystal light, gold, and the sun illuminating the atmosphere.



Figure 5. Transition in the fifth layer in eight layers of heaven filled with blue and yellow.
(Author, 2021)

As previously explained, this scene, which contains the eight layers of heaven, is a spiritual experience of the character Meha. Meha which has fallen from his faith is strengthened again by experiencing a "new creation" in his belief. In this creation process, from the lighting aspect, Meha experienced the two main parts of these eight layers. Starting from layer one to four which contain the 'divine' and blue crystals, which reflect constancy. Followed by yellow colors that come from gold, celestial bodies, and the character of an eagle (see figure 6) which reflects the hopes and figures of the ancestors who protect Meha's character. Then it ends with the appearance of a purple color, the result of a split complementary yellow color, which reflects a new understanding of Meha's faith in *Marapu*.



Figure 6. The figure of an eagle representing the ancestors' journey of the character
(Author, 2021)

4. Conclusions

Meha Anakiada Marapu's animation is an attempt to raise the issue of religious discrimination, especially in Sumba. Using light as a means of storytelling, which includes directing the viewer's eye, emphasizing the mood, and visual shaping. With culture, cosmology, and *Marapu* as references and a basis for storytelling, which was adapted from Monica Wihardja's short story, *Kisah dari Sumba* by Monica Wihardja. It is hoped that through media such as animation, besides raising the issue of discrimination, it can also educate Sumba's culture and Marapu's teachings.

5. References

- [1] Soeriadiedja 2013 *Antropologi Indonesia: Indonesian Journal of Social and Cultural Anthropology (Vol.34)*. (Universitas Indonesia) p 60-66
- [2] Williams, D., & Ngunyen, V 2013 *Beyond the Golden Rule: A Parent's Guide to Preventing and Responding Prejudice* p 17-23
- [3] Yüceliyigit, S 2016 *The of Three Dimensional (3D) Animated Movies and Interactive Applications on DevelopmEffects ent of Visual Perception of Preschoolers (Vol. 41)*. *Education and Science* p 256-258
- [4] Jasmine, P Katatikarn and M Tanzillo 2016 *Lighting for Animation: the art of visual storytelling*. Florida: CRC Press p 14-15
- [5] Merriem-Webster n.d. *Heavenly*. In *Meriam-sebster.com dictionary*. <https://www.merriam-webster.com/dictionary/heavenly>
- [6] American Psychological Association 2019 *Discrimination:What it is, and how to cope*. <https://www.apa.org/topics/discrimination>
- [7] Pemerintah Daerah Kabupaten Sumba Timur 2011 *Website Resmi Pemda Sumba Timur: ARTI LAMBANG DAERAH KABUPATEN SUMBA TIMUR*
- [8] Pemerintah Daerah Kabupaten Sumba Barat 2018 *Lambang Daerah*
- [9] Soekanto, Astin 2020 *Makna Filosofis 14 Motif Tenun Dari Nusa Tenggara*
- [10] Maria, Siti, and Julanus Limbeng 2007 *Marapu di Pulau Sumba Pengungkapan Nilai-nilai Kepercayaan Komunitas Adat* p 125-129