Humaniora, 13(1), March 2022, 1-7
DOI: 10.21512/humaniora.v13i1.7344

P-ISSN: 2087-1236
E-ISSN: 2476-9061

BARONG BALI PERFORMING ARTS: A STUDY CASE OF DANCE MOTION PATTERN

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Received: 19th May 2021/ **Revised:** 29th June 2021/ **Accepted:** 14th July 2021

How to Cite: Limano, F. (2022). *Barong* Bali performing arts: A study case of dance motion pattern. *Humaniora, 13*(1), 1-7. https://doi.org/10.21512/humaniora.v13i1.7344

ABSTRACT

The research aimed to save the traditional Balinese Barong dance motion patterns and convert them into digital animation. Using the mask was a uniqueness and as one of the characteristics of the traditional dance. Some problems arose in today's global situation: the challenge of eroding local society cultures to be replaced by global cultures. Another factor was the new generation, who loved technology and digitization. The research showed how to make traditional art that had recommendations in new digital media 3D animation. This was necessary to increase interest for the new generation about traditional culture and the creation of digital archives that were easily accessible to learn and develop in this traditional culture. The method was applied qualitatively through approach practice-led research by making experimental data on the dance motion pattern of the head of Barong Bali. Then observations were made and described in animation science, resulting in an academic understanding of motion and 3D digital media production. The results of the research consist of Barong Bali motion pattern in 3D, descriptive explanation of movement patterns, and the process of creating 3D animation digital archives. All of this is expected as recommendations for ways to produce digital archives 3D Animation of another Indonesian traditional culture.

Keywords: *barong Bali, performing dance, motion pattern*

INTRODUCTION

Indonesia is a maritime center of the world that was initiated by President Jokowi at the East Asia Summit in Naypyidaw Myanmar - on November 13, 2014. This is proven by the strategic condition of Indonesia's waters crossed by two immense oceans, namely the Indian and Pacific oceans (Yani & Montratama, 2018). Indonesia as a center of maritime is not a new thing, but this has been regarded since the entry of Hinduism - Buddhism in Indonesia. Indonesia maritime causes the process of cultural acculturation. According to Redfield, Linton, and Herskovits (1936), cultural acculturation is a phenomenon when individuals who have different cultures come continuously and make contact from the first meeting for a long time. Thus, this is changing the original cultural pattern of one or both of these groups. This acculturation process does not happen instantly but requires a long historical process (Suryana, 2017).

This acculturation process eventually results in many new or adaptive cultures that continue to develop and survive until today. One example is the culture in Bali - Indonesia. There is a solid cultural acculturation process between Balinese and Hindu cultures. This is what makes Bali has a strong appeal in tourism (Subawa, 2018) because it can combine local culture from ancestral heritage with new cultures. So that many interesting traditional arts are created, one of which is traditional performing arts.

Balinese traditional performing arts is a cultural heritage that has a long history. This traditional performing art is started in the pre-Hindu era. Due to the process of Hindu accumulation in Bali, the traditional Balinese performing arts that are known today have emerged. This traditional performing art is

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essentially a ritual used by Balinese people to perform rituals. However, over time, the performing arts have turned into the cultural identity of the Balinese people that is popularized by local artists in the early 20th century. Some of them are *Cak, Barong*, *Kutisrya*, and others (Seramasara, 2018).

Barong dance is chosen as an object in the research because of its international attraction and being known. *Barong Banjar Denjalan-Batur* dance in Batu Bulan village is a Balinese traditional art with religious values in the 20th century. *Barong* Bali has become a tourism necessity. However, over time, there has been a shift in meaning. Now, the *Barong* dance has become a tourist dance performance that aims to attract and entertain local and international tourists. At first, this *Barong* dance was sacred and staged without stories because it was a sacred art during the implementation of Hindu religious ceremonies. *Barong* itself is the embodiment of *Sang Hyang Tri Murti* (Lord Brahma, Lord Vishnu, and Lord Shiva). It is only natural for the Balinese Hindu community to become a cult. The mask is one of the characteristics of this traditional dance. The selection and making also become a measure of the magical value of this art (Dewi, 2016). *Barong* dance performance has a general story of a battle between virtue and evil. *Barong* is a mythological animal that symbolizes virtue, while *Rangda* is also an all-powerful mythological creature that symbolizes evil. These two characters are different in describing the virtue and the negative nature of vanity/vices (Subrata, 2014). Figure 1 shows the *Barong* Bali performance arts.

Figure 1 *Barong* Bali Performing Arts
(Source: YouTube Channel pavdb092)

Traditional art is the identity of local society that should be the focus of every society to maintain its cultural identity. The challenges of globalization also make traditional cultures less desirable than global cultures. One of the factors is that generations Y and Z understand and master technology, especially the internet, which is the window for foreign culture entry (Dwidienawati & Gandasari, 2018). One example is the K-Pop dance with attractive packaging of artists and actors accompanied by modern dance and music. There needs to be a new approach in maintaining the sustainability of Indonesian culture. The way is to use technology to develop traditional arts into new media so that it becomes digital archive data that can be appreciated by the local society (Irianto, 2017).

The results of a survey about the new generation who do not have an emotional interest in traditional arts with conventional forms show the condition of traditional museums that are more dominated by the baby boomers generation than the generation Z. The results of a survey are conducted with participants in the arts, by the National Endowment for The Arts every five years since 1982. The survey provides a statistical picture of the declining trend of live performing arts, especially among those under 45 years of age. However, the level of enjoyment in art through digital media is experiencing an increasing level of interest. The survey in 2012 has shown that 71% of Americans are interested in enjoying art digitally, compared to 49% who like visual art in person. This is also proven through several museum experiments that use digital technology and virtual worlds that there is an increase in millennial and Z generation visitors. This case is proven by The Museum of Ice Cream (MOIC) and The San Francisco Museum of Modern Art (Ittelson, 2019).

In the development of Industry 4.0, it is also one of the factors that makes everything digital (Tay et al., 2018). Every cultural product also faces a digital generation that easily accepts digital information (Harari, 2018). Society focuses more on digital technology than something conventional (Haqqu, 2020). Therefore, there is an urgency for even conventional culture to make a new digital language, which becomes a digital data archive that can be stored to be developed into digital performing arts or a guide for the younger generation to learn traditional dance.

Besides adding to the dynamics of the local society, the converge of different cultural backgrounds also adds to new problems, such as the absence of proper documentation of Indonesian culture, both manual and digital; the regeneration process of cultural learning, which is still lacking in interest; and limited to be able to learn by default to be studied. On the other hand, there have been many Indonesian cultures that have been claimed by other countries. This, of course, cannot be tolerated. The existence of digital archiving can prevent patents from irresponsible parties and can preserve Indonesian culture itself, both as teaching material or as a legacy in the future.

The research aims to save the traditional Balinese *Barong* dance motion patterns and convert them into digital animation. So there is a systematic and academic guide on the development of traditional dance in Indonesia. This can also be potential research in the future that can be developed with new technology that can stimulate interest for the younger generation to learn Indonesian traditional dance.

This is necessary to change traditional arts in Indonesia into a digital form of 3D animation or other digital media because there is a possibility that the younger generation does not recognize and lose appreciation for Indonesia's traditional arts. This has happened to several performing arts in Indonesia or

is threatened with extinction because it is difficult to learn, access, and especially appreciated by the new generation (Opini.id, 2020). There are so many Indonesian arts, and it would be a shame if there is no digital archive to study and appreciate. Many countries have been implemented this to maintain the sustainability of their cultural heritage (Portalés et al., 2018). In this case, it requires an academic approach to innovate the traditional Balinese art of *Barong*.

METHODS

The object of the research is limited to the Balinese *Barong* dance as a model. Then it is carried out motion experiments with animation visual communication design science. The research method is carried out qualitatively by learning *Barong* dance data based on literature, offline videos, and online videos. According to scientific developments, digital animation is used in various interdisciplinary fields to provide innovation. In the research, the pattern of the Balinese *Barong* movement is a case study that will be carried out by innovation (Sito, 2015). Furthermore, the theory of animation principles will be used to describe the movement patterns of the Balinese *Barong* so that they can be understood academically.

The approach applied in the research is based on practice-led research performative, through validating data by making experimental samples (Murwanti, 2017). The experimental study motion pattern is carried out on the movements of traditional dance, which will be studied directly and analyzed the patterns contained in the movements using the principles of animation. The researcher collects data from related subjects, from traditional *Barong* dancers. Data have been observed directly in the field by using videography, photography, and recording motion patterns with the kinetic system, or also using videos from sources that can be collected in online or offline media. Demonstration that is meaningful in English means activities in which the process shows conformity with the truth that can be demonstrated and facts that can prove in action being learned (Merriam-Webster, 2014). In this aspect, there are demonstrators (*Barong Ket* dancers) who demonstrate dances (either online or in-person), and learn the movement patterns of the *Barong* dance, body gesture expressions, walking, and so on. Therefore, here the research team has positioned itself as a person who observes and studies the dance from the *Barong* itself, how the movement pattern of the *Barong* dance as a whole. After that, the researcher collects the obtained data, describe the information obtained, and conclude from observations of subjects who have demonstrated the *Barong* dance. Then, an experiment is carried out to convert the original *Barong* dance data video into digital motion. The hopes and benefits of the research can be developed into digital innovations of traditional performing arts in Indonesia so that the younger generation can continue to appreciate and even participate in advancing traditional arts.

RESULTS AND DISCUSSIONS

In the initial stage, observations are made on the Balinese *Barong* dance that is done based on observations of field data that have been obtained. There is difficulty finding traditional *Barong* dancers who use traditional tempos because there are many acculturations of more modern songs. This is because there is a change from sacred dance to entertainment dance. In addition, online video data collection is also carried out.

The *Barong* dance scene begins with an introduction through a ritual depiction of *ngetus* (separating the mask from the body/*raga* of the *barong*). This section features six dancers who circle right in the middle of the stage that is preceded by a constant and steady sound of foot grumbling. For the *barong* movement itself, the *nyimbar, nyungar*, and *ngopak barong* movements are carried out. *Barong* dance has movements that must be mastered, particularly *nyungar* and *nyimbar*. *Nyungar* is a movement performed when the body is standing, while the *nyimbar* movement can be done in standing and sitting positions (Pratama, 2020). Three dancers move to fill each other using *Barong's* head, followed by a spar with *Rangda*. In addition, there is also the processing of foot gongs carried out in the *malpal, ngoyog,* and *tanjek* movements. These movements are explored to describe the *barong's* ferocity and expression (Putra, 2017).

Based on the main dancer holding a *Barong* mask, the limitation of the *Barong* dance movement pattern experiment is only on the head. The *barong* movement has five patterns of head movement. As for the continuation of the legs and body, it is a different variation in the *Barong* dance. So the researcher decides to approach the motion pattern animation on the *barong* head movement pattern in the research. The first discussion is how the dancer holds the *barong's* head. There are several ways to hold the head of the *barong* depending on how the dancer wants to present the dance tempo. On the head of the *barong*, there is a string of bells that are used to give sound. The dancer must be agile to play his right/left hand to strike with the existing lever to stomp the jaw. Figure 2 shows the dancer's hand position in holding the *barong* head mask.

In the head motion pattern, the researcher only focuses on the movement of the Y rotation axis in the animation. This is because the movement of the *barong's* head will depend on the rotation. The other movements combined become a pattern depending on the story that is told. The research uses the rotoscoping animation method to obtain detailed motion following the video. Rotoscoping is an animation technique that uses recording the motion of an object directly and then tracing each frame to create a motion like the original movement from the video. The advantage

of the rotoscoping technique is making complex and difficult animations easier, while the disadvantage is that when there is an error in tracking for rotoscoping, the results will not be good, and it will be difficult to fix because it is done straightforward (Rzeszutek et al., 2010). The animation results are then processed further with a curve editor in the 3D program to get a more precise deceleration, resulting in a movement position of *the barong's* head according to the pattern being played.

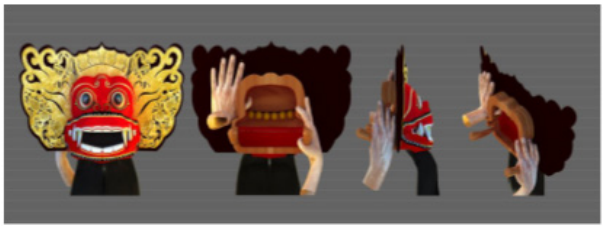

Figure 2 Digital Illustration How to Hold *Barong's* Head
(Source: Putra, Limano, & Wijayanti, 2016)

After creating a model in a 3D program, the animation process is carried out by making a key pose on *barong's* head movement. Production process applies 12 principles in animation, among others are Squash and Stretch, Anticipation, Exaggeration, Arcs, Overlapping Action & Follow Through, Secondary Action, Timing & Spacing, Slow in & Slow out, Staging, Appeal, Solid Drawing, Straight ahead - Pose to Pose Technique (Sultana, Meissner, & Peng, 2013). In principle, the twelve cannot be separated, but there is a part of the principle that is more dominant in the movement. The experiment shows that the *barong* head dance movement is dominant in timing spacing and ease in/ease out. Figure 3 shows the five *barong's* head movement patterns.

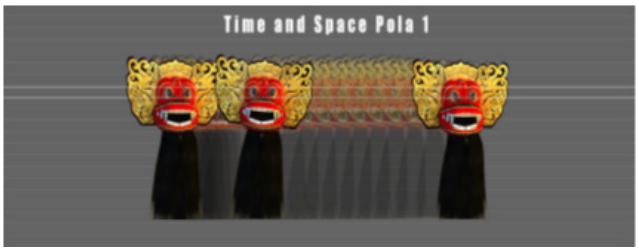

Figure 3 First Motion Pattern of *Barong* Head
(Source: Putra, Limano, & Wijayanti, 2016)

The first pattern in Figure 3 has a *barong* head movement that only moves to the left or right without any upward movement. This can be seen from the eyes' position that is still parallel from the beginning and end of the frame. The solid shape represents the Set Key Position (placing the main pose in motion), while the shaded shape represents the acceleration and deceleration of *barong's* head (number of images in frame time).

Figure 4 Curve Editor First Motion Pattern
(Source: Putra, Limano, & Wijayanti, 2016)

The illustration for the motion curve of the first pattern is depicted in Figure 4. In this movement, the curve editor of the *barong's* head accelerates, then gets a static movement. In the end, it gets a significant acceleration with a slight slowdown.

Figure 5 is the second motion pattern of the *barong's* head. There is a slight movement of the head advancing forward. Basically, this movement is similar to the first pattern but adds forward head movement. This pattern has four sets of main keys, which then have different accelerations and decelerations.

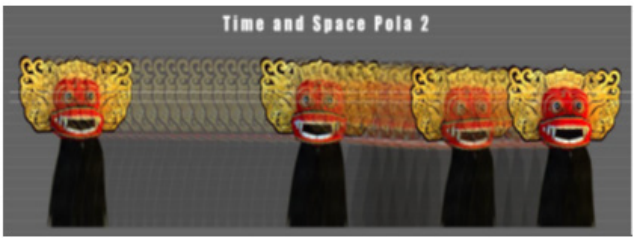

Figure 5 Second Motion Pattern *Barong* Head
(Source: Putra, Limano, & Wijayanti, 2016)

Figure 6 shows the curve pattern of *barong's* head movement. The start of the movement has a slight acceleration then gets a deceleration at the next set of keys. However, at the end of the frame, the head movement becomes dynamic with acceleration.

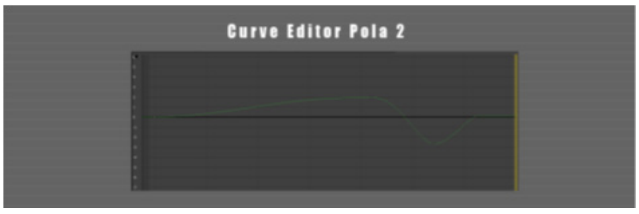

Figure 6 Curve Editor Second Motion Pattern
(Source: Putra, Limano, & Wijayanti, 2016)

In the third pattern of *barong's* head (Figure 7), there are five sets of keys, the position of the *barong's* head when moving right or left but does not make a stare while moving. So that there is minimal rotation in this movement. This movement is unique in advanced combination movements because it has an interesting deceleration motion.

Figure 8 explains due to the lack of rotation on the Y-axis. Then this motion curve editor produces to slow down at first, followed by acceleration.

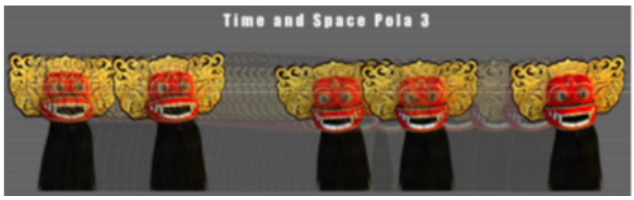

Figure 7 Third Motion Pattern *Barong* Head
(Source: J. Putra, Limano, & Wijayanti, 2016)

Figure 8 Curve Editor Third Motion Pattern
(Source: Putra, Limano, & Wijayanti, 2016)

In motion pattern fourth (Figure 9), it becomes the most motion pattern using the Y-axis. This is because the movement does not have a change in position but has a change in the rotation of the Y-axis many times, so it looks like shaking the head. This pattern uses seven sets of keys with very different spacing levels for each key.

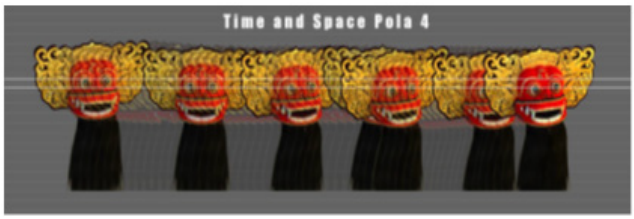

Figure 9 Fourth motion pattern *Barong* head
(Source: J. Putra, Limano, & Wijayanti, 2016)

In the fourth curve editor pattern (Figure 10), *barong's* head gets a different acceleration and deceleration motion for each key. This is due to the rotational tempo of the *barong's* head which aims to make certain sounds on the existing bells. Overall, more deceleration occurs to get the maximum chime sound.

Figure 10 Curve Editor Fourth Motion Pattern
(Source: Putra, Limano, & Wijayanti, 2016)

The fifth motion pattern (Figure 11) is a movement pattern that raises *the barong's* head up and down, accompanied by a vibrating rotation when going up and down. Since there is only vibration movement as it goes up or down, the curve only focuses on the bounce of each vibration by making an arc on the curve editor (Figure 12).

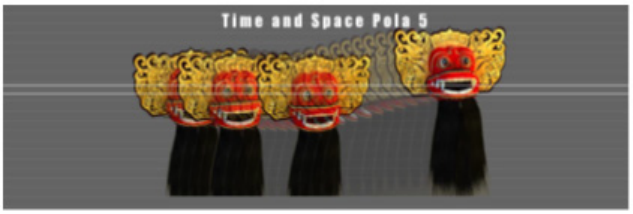

Figure 11 Fifth motion pattern *Barong* head
(Source: Putra, Limano, & Wijayanti, 2016)

Figure 12 Curve Editor Fifth Motion Pattern
(Source: Putra, Limano, & Wijayanti, 2016)

To understand the whole process of digital animation production of Balinese *barong* motion patterns, Table 1 describes the production process of creating a digital archive of traditional Balinese *Barong* dances.

Traditional works of art made by humans reflect the existing culture of the local society. Cultural representation is manifested in daily life, religion, ethnicity, and nationality. This representation can be realized in the form of digital animation to convey a cultural reflection of the local society in an area (Wikayanto, Grahita, & Darmawan, 2019). Internet speed has also supported interactive acceleration and access to local society and the world. One example is the video-based social media YouTube (Dylewsk et al., 2017). This animated digital media is a way to introduce Indonesian culture in an interesting way. The animated digital archive created will also be more accessible to the younger generation through an online platform. So that traditional dances can be understood, studied, and applied (Langga, Ahmad, & Mansoor, 2020).

The research seeks to answer research problems regarding the flow of globalization, the new generation, and the digital era. These three aspects affect the development of traditional arts in Indonesia. In the flow of globalization, the elimination of the separation of local and global culture will affect the acculturation of local culture, whether traditional art culture will adapt or survive in its shell. For the new generation, it is effortless to get information about the global world and its culture today. This is also a matter of appreciation of traditional art culture because there is a comparison of modern art and modern culture, which

Table 1 Production Process Motion Pattern *Barong* Bali Dance

No	Process	Description
1.	Observe Data	In this section, the researcher observes data directly through recording, watching live demonstrations from dancers, as well as collecting data offline or online from the Balinese *Barong* dance.
2.	3D Modelling	In this production process, 3D modeling is made, based on the main characteristics of traditional dances. In the *barong* dance, it is a *barong* mask that is digitized into a 3D model, it can be done in great detail or simply, the most important thing is that can illustrate the movements of the dance.
3.	Rotoscoping animation key pose	In this production section, learning is carried out based on poses with the most visible changes in the video, then movement and rotation are carried out. After the pose is in accordance with the movements in the video, the 3D software sets the key. The goal is to lock or record the pose later into motion. In addition to the main key pose, is also made in between key (The meaning is made key between the main movements).
4.	Animation curve editor – splining & smoothing	In this process, it is the completion of the entire movement that has been recorded, by paying attention to the acceleration and deceleration of the *barong* head dance movement. The purpose of this process is to produce dynamic movements in accordance with the original motion, then simulate the same motion.
5.	Animation preview or Render	The final process when the movement is complete, then preview the animation in 3D software. If you want to get a better display quality, then do the rendering process by adding lighting and rendering in 3D software.

are easier to appreciate. The last aspect is digital, all museum accesses in Europe and developed countries seek all cultures, and the results are digitized. This is because digital archives are more accessible, studied, and even appreciated. Digital cultural archives, tangible or intangible, can be sustained.

CONCLUSIONS

Barong dance, which is a legacy from the Airlangga kingdom, has a simplified form of animation in the form of repetitive movement patterns. *Barong* dance basically has five basic movements for the head, while the dancer's movements follow the theme and storytelling. This is interesting because, with this data, there is even more reason to carry out further research on other dances. The combination of using 3D software really helps the creative process that can be developed. Basically, other dance movements have repeated patterns and rhythms, thus creating movements. This animated 3D pattern will be beneficial for archiving Indonesian culture digitally so that it can be developed. It should be noted that Indonesia has hundreds of traditional dances from each region. The need for digital recording of traditional dance can sustain a culture that could become extinct.

The research is still ongoing preliminary research in order to map traditional dance digitally. The lack of archives in the form of notes, videos, or structured instructions is the main obstacle in this research. So the research results are still open to debate, and the proper synthesis is sought in the context of the research of dance motion patterns. For example, the use of newer technology like motion capture can record almost the entirety of dance movements, or further development using virtual reality methods can be used as a learning tool for the younger generation.

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