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Abstract

Visualizations of the body of the famous Javanese Prince Diponegoro appears in various media, ranging across sketches, paintings, sculptures, banknotes and coins, shadow puppets, stamps, theatrical performances and electronic devices. All these visualizations mostly follow previous visualizations influenced by artist imaginations.

This research seeks to present Prince Diponegoro in three-dimensional animated visualization using a motion capture technique. To complete this, the project draws from authentic manuscript research from the autobiography of Babad Diponegoro. Further, the project employs intertextuality as a method with which to interpolate the data, and hence to obtain a satisfactory overall visualization. The physical features, gestures and paralinguistic elements contained in the verbal text of Babad Diponegoro have been employed using motion capture data based on events written in the Babad Diponegoro. Many existing representations of the prince exist. However, this study attempts to rethink these existing visualizations, so as to produce a much more accurate, if not completely new, icon, thus differing to existing representations.

Keywords: Prince Diponegoro, intertextuality, verbal text, digital visual text, motion capture

Background

Babad Diponegoro of Diponegoro's Chronicle is the autobiography of Prince Diponegoro (1785-1855), a Javanese aristocrat, an Indonesian national hero and a Pan-Islamist. Diponegoro's chronicle was written during his exile in North Sulawesi in 1831-1832, and is a personal record of Prince Diponegoro as a key figure in the

history of modern Indonesia. This text is deemed an autobiographical document in modern Javanese literature, which shows an unusual sensitivity to local conditions and experiences.

The credibility of biography and autobiography as historical sources are often questioned due to the fact that they are written for a specific purpose and with low memory capacity accompanied by the writer's high subjectivity factor. The perks of biography and autobiography, however, are seen in their ability to narrate social conditions of, among others, a given time, social stratification, perceptions and attitudes of various social strata towards invaders and modernization, cultural values and cultural notions, traditions of noble family life. Equally important is their function as a source of information that come from first hand or historical actors (Kartodirdjo 1992).

Babad Diponegoro manuscript, an autobiography, can serve as an authentic source for visualizing the physical body of Prince Diponegoro. Diponegoro's chronicle was recorded as a manuscript of the UNESCO Memory of the World in 2013. According to historian Peter Carey, as quoted in *Tempo* magazine (2020), the original text was lost, after being copied and translated into Dutch.

The Babad at the National Library is a copy of the original manuscript. Bataviaasch Genootschap van Kunsten en Wetenschappen borrowed it from the Diponegoro family after he died on January 8, 1855. The manuscript was returned after being copied. But Carey did not find the document when he visited the Diponegoro family in Makassar in September 1972.

The copy was translated by Balai Pustaka in 1983 and was first translated into Indonesian by Narrative Publishers, Yogyakarta, in 2016.

There have been many attempts to visualize Prince Diponegoro in various media, ranging from sketches, paintings, sculptures, paper money and coins, shadow puppets, stamps, stage performances and electronic devices. All visualizations regarding Pangeran Diponegoro are deemed to have been baseless or only followed previous visualization works which are also based only on the artist's artistic imagination. Assuming that there is no authentic text translation of the Babad Diponegoro, which is a reference for artists to visualize the body of Prince Diponegoro until 2016, coupled with the controversy related to his figure, the visualization of Prince Diponegoro becomes very diverse. Prince Diponegoro's postures, gestures, facial characteristics, clothing and accessories are always predictable. The turban, scarf, prayer beads, krisses and horses are almost always seen in works of art. The expressions and gestures are adjusted to the artists' alignments. Interpretation of the physical body and gestures of the text is interesting to study.

This study aims to identify the characteristics of Pangeran Diponegoro as depicted in the chronicle Babad Diponegoro, what aspects in intermedia art can be used to embody the characteristics of Pangeran Diponegoro, and what characteristics of Pangeran Diponegoro can be depicted through intermedia comprising embodiment, moves, gestures, voice, lights, and interactivities.

Visualization of a written text into various other forms is deemed an intersemiotic translation process as proposed by Roman Jakobson. The notion of intersemiotic translation itself has been widely applied to the process of theorizations of multimodal practices across cultures and languages in various ways (Kurniasih 2019). Translation involves the transfer of 'meaning' through one set of language signs into another set of language signs and a whole set of extra-linguistic criteria included in the process. It is far more complicated than a mere linguistic process (Bassnett 2002).

Method

This study uses a qualitative biographical approach. Winfried Marotzki (2017) describes that some assumptions are elaborated in different disciplines such as the sociology of knowledge, symbolic interaction, ethno-theory, ethnomethodology and conversation analysis. Qualitative biographical research accepts that an individual's biography can always be understood as a construct. The main focus is on examining individual forms of specific social and environmental experiences.

This study also uses Roman Jakobson's intersemiotic translation to depict the process of transferring a historic figure as written in the chronicle, i.e. Pangeran Diponegoro, into a 3-dimensional form. This research attempts to describe the elements that affect the process of intersemiotic translation of a verbal language into a visual language, taking into account cultural context in the process. By employing this method, it is expected that the details of the translation process and whether shifts or changes have occurred during the translation can lead to greater insights into and novelty in the existing means of translating a figure from a written into a visual text.

The first step of the process was to find ideas in the verbal text, the chronicle, which would be expressed visually, followed by the researchers finding an appropriate idiom to be displayed as a semiotic expression. The second stage was conducted to uncover the symbolic narrative by analysing the text, studying it using semiotics, and then translating it visually with focus on shapes, colours, textures, moves and gestures and other aspects that correlate with the narrative contained in the Diponegoro chronicle. The third stage required translating the symbolic narrative to fit the ideas to convey to the public or audience. This process was carried out with the aim of re-defining the narration that was presented in the composition of visual elements. The visual scheme presented was 'form following ideas,' and not vice versa. Gestures displayed as visual elements were chosen based on the ideas to be conveyed. Although technology was used as the main tool, the presentation and performances of the result prioritize visual simplicity, displaying what is essential and important. The researcher has not only reproduced and appropriated texts, but has also reproduced meanings and has opened up the possibility of introducing other meanings of a visualized reality.

In connection with the creation of this work, the researcher also used the foundation of Wallas's theory outlined that proposes that the process of creative thinking involves four distinct stages of control:

1. Preparation: A problem is investigated consciously and systematically;
2. Concentration: Focus on one topic or idea;
3. Incubation: A period of abstention from conscious thought about the problem;
4. Illumination: The creative idea appears in a sudden flood of inspiration, following a series of subconscious associations;
5. Verification: The validity of the new idea is tested, and the idea is reduced to exact form (Karakas 2010)

To limit the scope of this study, following Leedy and Ormrod (2013), a number of assumptions was made:

- a. The body of Prince Diponegoro is that visualized as being during the time of his arrest while negotiating with the Dutch.
- b. Prince Diponegoro's visualization was based on information in the Babad Diponegoro chronicle manuscript, as an autobiography.

Referring to the above formulation, the use of digital technology to interpret texts about the body of a character into a 3-dimensional model was found to be helpful for accurate visualization. However, when the text describing the body was presented as a 3D image, there were shifts or changes, including the emphasis in

the process of the body and technology integration. Not everything described in the text, including myths and charisma, could be accurately visualized with the same representation, meaning and effect in the digital body.

The use of the Babad Diponegoro autobiographical text as a reference for the visualization of Prince Diponegoro has never been conducted prior to this study. The Babad Diponegoro text is an authentic text as it was written based on the direct narrative of Prince Diponegoro during the exile, and is worthy of being used as a reference. Utilization of three-dimensional technology to visualize the body of Prince Diponegoro is yet to be widely explored. The visualization of Prince Diponegoro was based on the work of previous artists. An interactive visual presentation of the performance of the arrest of Prince Diponegoro also has never existed to date. Thus, this research is expected to lead to the production of a new Prince Diponegoro visualization and to open up possibilities for future use by providing a new experience for audiences.

Discussion

To create a digital 3-dimensional model of Prince Diponegoro, it is deemed essential to first make an interpretation picture of Prince Diponegoro from various angles. Prince Diponegoro has been portrayed in a slightly sideways position, as in the stamps and banknotes of the Republic of Indonesia. While the profile of Prince Diponegoro's face is depicted on a coin.



Figure 1. Pangeran Diponegoro in banknotes of Rp1000 and coins of 26 cent

To create a 3-dimensional model of Prince Diponegoro's head, the researchers had to make an interpretation of the existing visualization and hence pictures of Prince Diponegoro front view and side view profiles were obtained. The results are as follows.



Figure 2. Impressions of Pangeran Diponegoro front view and side view

Following completion of Prince Diponegoro's front and side view appearance, the next step is to create a 3-dimensional model using software Character Creator version 2.2 for iClone; the results obtained are as depicted below.

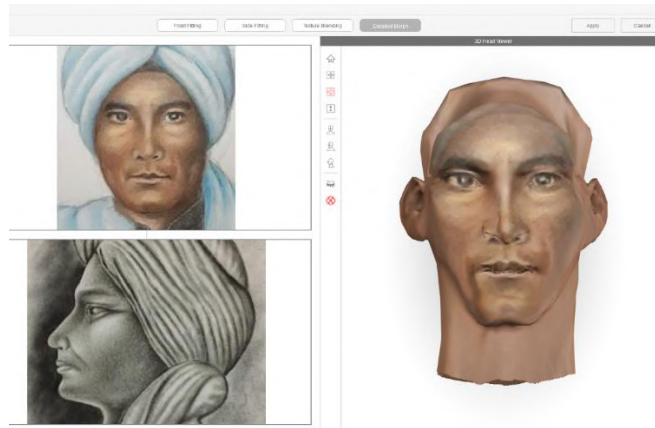


Figure 3. The Process of modelling 3-dimensional head of Pangeran Diponegoro

After obtaining a 3-dimensional head model of Prince Diponegoro, the next step is to make a 3-dimensional model of the body of Prince Diponegoro. The result is as below.



Figure 4. The process of modelling the body of Pangeran Diponegoro

Next, the head and body of Prince Diponegoro were combined.



Figure 5. Result of modelling the body of Pangeran Diponegoro

Prince Diponegoro's 3D body construction was tested using Blender software. To animate the body, it is necessary to 'rig' the 3D model. When the rigging process is complete, the model is driven by iClone software from Reallusion.



Figure 6. The process of rigging Pangeran Diponegoro

Face mapping is done using Face Generator software. The model used for the visual construction of Prince Diponegoro's face is Kii Roni Sodewo's face, with the permission of the people concerned. The selection of Ki Roni Sodewo's face as a model was based on the fact that he was the seventh descendant of Prince Diponegoro.

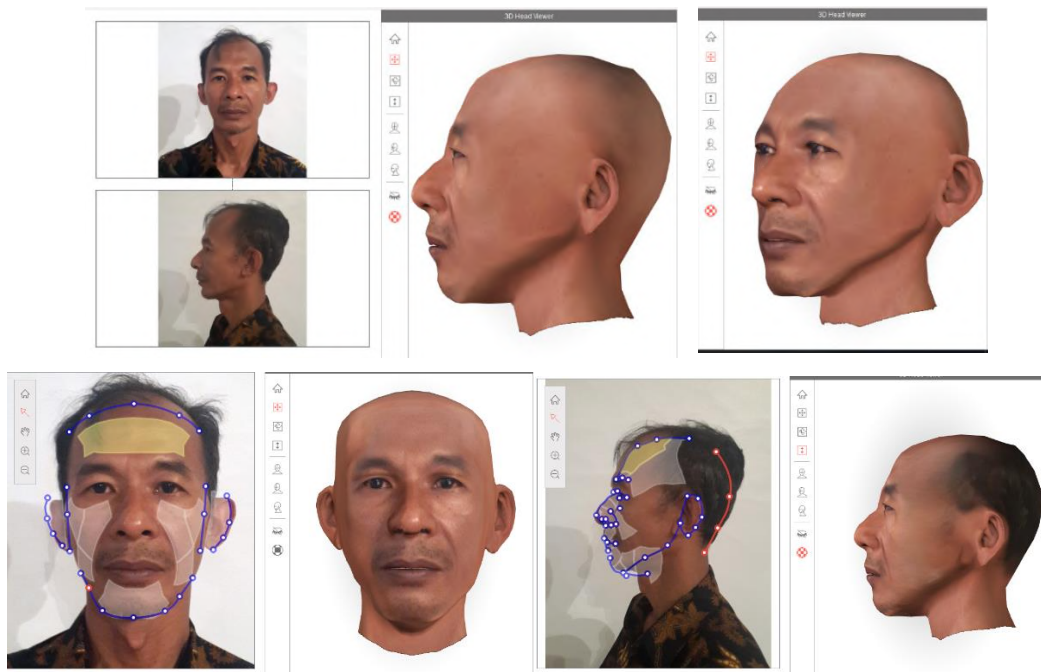


Figure 7. Process of modelling Ki Roni Sodewo's Head

Conclusion

The results of this study indicate that the multidimensional visual construction of a character that is built based on text plays an important role in being able to give a new impression to the image of a character who previously felt monotonous because it was not based on authentic evidence. In addition, the use of digital art and motion capture technology is very useful so as to provide the expected effects and to provide new experiences in enjoying art. A number of paralinguistic aspects, such as the charm and charisma that are suggested by and constructed from the text cannot always be visualized, either through two-dimensional and three-dimensional media, intermedia and even through motion. Even so, there are many other aspects that cannot be provided by the text, but can be offered by visual work, for example, light, color, shape, motion and special effects in the performing arts.

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