

# The Art of Silat: Mapping the Trajectory Lines for Hidden Symbols

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**Abstract** This research paper discusses symbol formed from the Silat gesture. Silat is a form of martial arts that is a part of Malay heritage that contains various aspects of philosophy in religion and culture. Silat gestures and movement will be mapped using motion capture to track the lines and shapes resulting from this motion. These lines and shapes then will be compared to symbols that can be found in nature or in religious aspect.

**Keywords:** Symbols, History, Motion Capture, Silat

## INTRODUCTION

Motion capture is a medium which can potentially become a tool to measure different types of artefact which can help to visualize the local context. Malay Silat is rich with metaphor and philosophy. It also shows the wealth of civilization and culture in creating the meaning, connotation and denotation. In this topic, there is a space in which the value of the element of Malay Heritage can be explored scientifically.

Capturing silat using motion capture is a part of innovation to measure the accuracy of the data to in silat movement. Silat is the art of defending oneself and which also can be used as an exercise and as a performance. Silat is filled with philosophy, etiquettes and values. This research aims to show that technology can be used to bridge this art of war and the science. Motion capture allows the formation of the trajectory line that was traced during the movement to map and visualize the dance. This approach will show the elements of art which is the harmony, balance and dynamics for each of the movement from different perspective that cannot be seen with the naked eye. Based on previous studies, the image of the trajectory lines that were created by silat movement can be seen as a way to understand the symbols created.

## Framing the Question

The previous Study by Gongbin Shan, 2010, had mentioned about trajectory lines captured by motion capture that can become an effective tool for cultural and behavioural study. This research also used a similar approach research by using the visual data of the trajectories on Silat movement. By using motion capture technology to see symbols in Silat motion and its relevance to historical aspect, that requires an in-depth analysis of the subject. If previously in the early 20th century, photographic techniques were used to test the subject nowadays, the motion capture technology can be used easily and effectively.

The question of whether the mapping of the trajectory line through motion capture can effectively be used as a tool for motion interpretation that adheres to traditional traits? If

the answer to the question is "yes", then what are the appropriate factors and approaches to make motion capture relevant as a part of a historical and cultural research. Is the illustrated visual characteristic helpful in finding meaning in symbols?

This study is an initial discussion of the recording utility of motion capture equipment as a tool to assist the characterization and analysis of human movement and to identify the elements of movement that are relevant and unique to the nature and characteristics of the movement.

## Method

Cortex Motion Analysis Software is a special software of motion recorders that have specialized applications for scientific analysis, numbers and visuals. The analysis process is done by guiding the placement of 38 reflector markers in the joints of the body. The amount of reflector markers applied is not necessarily tied to the sum of 38. Guided by the principles of biomechanical art, there are guidelines outlining that the main joints are important places for markers. The pairing fitted with this reflector marker will fit in the studio of the motion recording device which is equipped with eight cameras from every corner. The motion recording is then accessed in the software. The mounted reflector marker will produce a line of motion. The visual mapping process will be carefully taken from a topography point of view to track the formation of the alphabet while the action is being taken. For the subject, the placement of the marker at the correct place is necessary to obtain accurate data. The findings of previous studies help researchers to ensure that the process of mapping the Silat movement is progressively more systematic. With a real understanding of the field, the real scene, researchers will benefit from examining the performance so that they can retain the same performance features as possible. A total of eight cameras were installed in a 15 x 11 square foot space and a ten-foot height from the floor. A total of thirty-six reflector markers were mounted on the body and these markers will determine the trajectory lines of the Silat movement using the Cortex Motion Analysis software.

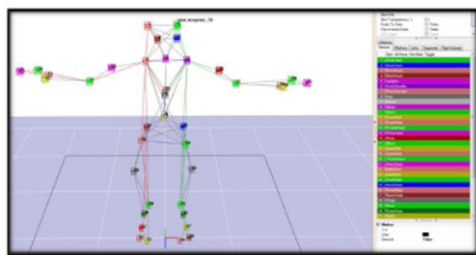


Figure 1.1 Exposure figure with reflector marker on the body (source researcher)

With reflector marker placement firmly on the limbs, researchers will see the trajectory lines generating in the software from the Silat movement. In this study, the researcher has mapped the movement using reflector based on the key movement of Silat gestures.

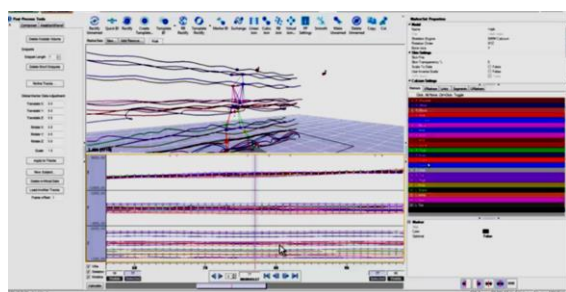


Figure 2.2 Software motion capture (source researcher)

## Symbols

Symbols obtained are the result from Silat mapping. Martial art is also referred to as the form of secret communication through gestures. This statement was also mentioned by Farrer stating that, "The 'moves' of *bunga* are multivalent in that they operate across practical and magical realms" (D.S. Farrer, 2009:101)

The *bunga* or flower in Silat means the aesthetic aspect of forms of Silat movement which in part can be aggressive but also can be graceful and flowery. The movements of the flowers have the implied intentions, it is a form of communication with the realm of the unseen nature. Every move has a purpose which is either to challenge or to welcome the participant.

Through that movement, the formation of symbols can be formed. The movements and gesture from Silat can form an alphabet or a symbol of flora or fauna. These movement has a meaning and for every gesture only the practitioner can understand every detail of movement they produced.

There are also movements that lead to spiritual aspects. which is a Silat that is a hereditary inherited. Frithjof Schoun in the Gnosis Divine Wisdom through writing (Ramli Awang 2003) mentions "among other things that the science of symbols is not only knowledge of the symbols that depart from the importance of value (quality), form, direction, number, natural phenomena, bonds, motion, - the nature or position of something.

Apart from martial arts, another uniqueness in this art movement is a Balinese dance. Although it is not a Silat movement, researcher want to emphasize the uniqueness of gestures that contain many unique aspects that contained mystery from motion. As stated in "de Zoete and Spies (1952: 256) in the writing of Farrer, Shadow of the Prophet

*"in Bali, the performer's arms, wrists, hands, and fingers carve intricate mysterious circling patterns through the air in gestures of adjuration or exorcism, as if weaving charms"* (Ferrer 2008:95).

The illustrated kinship about these two movements is a proof that the move is not merely a mere move. The study can only state that there is a mystery contained in the motion. However, it cannot be visually proven as to the shape of the pattern or symbols drawn in the motion. Sometimes the movement seems to be offensive, but we cannot find out if there is content that leads to something. The movement of Silat through the aggressive movements or flowers is also said to be the medium for communication with the unseen elements. This can be seen in a Cimande Silat study by Sanders. Sanders states, the inner practice of Cimande Silat is the backbone of the martial arts.

*"This and other such training of the spiritual ways are the true backbone of Pencak Silat whether anyone wants to admit it or not. Most who I have spoken too have no knowledge of any of the spiritual ways or have decided to forget and abandon the foundation of the art"* (Sanders, 1999)

The floor pattern in this Silat motion has a special design or diagram like, as a code to activate internal energy. Silat Cimande is one of the most popular practice diagrams in the game of Silat. This shows that in the motion of art there is a pattern formed whether it is planned for a particular purpose or it is something sacred.

## Tracing the History

The explanation of the symbol above explains that there are elements of symbols in motion that have the potential to understand history. It is undeniable that Silat is rapidly expanding and mixing with many types of Silat. There are usually martial arts practitioners who practice more than one types of Silat, and merge into a new form of Silat. Following this, the original Silat identity was difficult to identify. More difficult, however, that the combination of martial arts to form new martial arts is not documented. As we know for a handful of martial arts, information is delivered verbally not in writing. Then information was inherited from generation to generation so that information was disconnected. The use of symbols in the Malay or archipelago is closely related to the philosophy of religion and culture covering the universe. Each ethnic or clan in the Malay world is certainly associated with the symbol of the universe – flora, fauna and space. Not only this form of symbols is applied in the many forms of arts but it can also combine with many aspects to form a new something, whether it is planned, or not. Each of these clusters has its own unique philosophy through symbols.

## MAPPING RESULT DISCUSSION

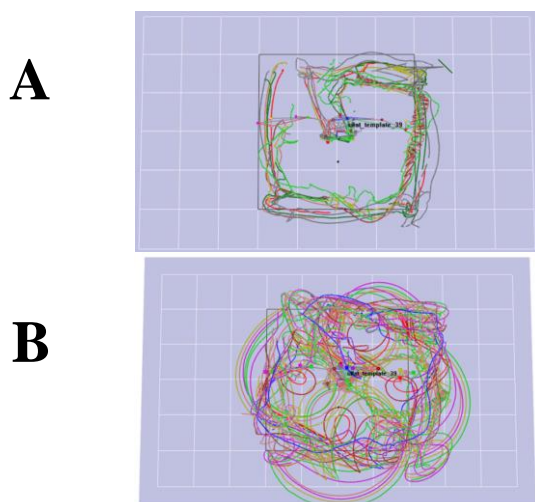


Figure 3.3 Background Duration 00:01:45:20 Frame 6320 (A) Line trajectories, (B) Complex movement (Researcher Resources)

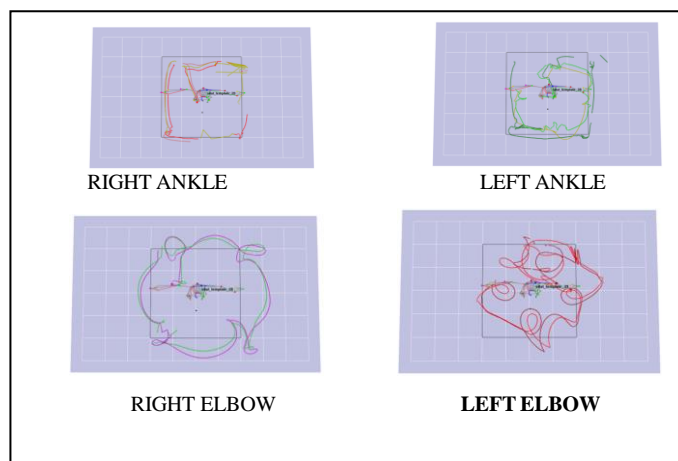


Figure 3.4 The movement from ankles and elbows (Researcher Resources)

The visual example of the motion mapping is a sample of the Silat movement of the *Minangkabau Titi Batang*. The visuals are part of the previous study. The focus given is only at one point of view. Referring to the above visuals shows lines formed from dynamic motion. The body that moves in the room produces a shape. We can see how the beauty of the movement forms something that cannot be seen with the naked eye. Plus, the movement has its own philosophy and art. Hence, motion capture is a new media that seeks to visualize the visuals that are difficult to see with the naked eye. Motion capture can provide accurate data and diverse

data other than visual form it also provides numerical findings. Digitalization and research in this way can be seen to conserve the treasures of the martial arts rather than extinction due to misinterpretation of motion motives and symbols in motion. The purpose of preserving this context is through the new media method, this knowledge can be effectively communicated. Through this kind of visual evidence, it can help to explain the meaning and lead to a deeper and more extensive discourse of knowledge. The motion recording device is able to play its role as a medium of cultural pronunciation, especially in visual aspects, motives, and movements in Malay Silat art.

## CONCLUSION

From the research, the researcher found out that the recording device was able to record the motion accurately. The research that involves movements can be carefully studied through visual comparison. Therefore, the researcher recommends that this method is considered as part of the effort to track and record the flow of many Silat movement found in the archipelago region. The symbols that were formed can be made as an example to compare the similarity between the other Silat movements. It is hoped that findings from this research will nurture future efforts. Through this research method, the researcher also suggesting that the scope of the study be expanded by examining other performing arts in other cultures.

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