

# Animation in Sculptures in Chola Temples

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## Abstract

*The movies are surely the most widespread form of mass entertainment the world has ever known. Moreover, the techniques of the cinema especially in the way they are able to manipulate the factors of space and time have greatly influenced the techniques of other arts. But it is in its ability to record and arrange moving images that the art of the movies remains unique. From the beginning of cinema, movies showed the help of moving dolls behind the screen in the presence of light. Their movement of these shadows on the screen marked a new evolution. This technique was first used in Europe. These techniques captured moving images frame by frame. This technique of animation technology is heartily employed in modern days' movies. Present day movies are incomplete without graphics and animation.*

By citing the example of animation art seen in drawing on a pottery vessel found in Shahr-e Sookhteh (IRAN), Sistan 2100 BC now in the national Museum of Iran [1]. My paper discusses that similar evidence of animation art were depicted in the Sculptures of Chola period Rajarajan- II( 1146 AD- 1163AD) at Iaravathisuvarar temple, Dharasuram, Kumbakonam And Kampaharesvara temple built by Kulottunga –III (AD 1178 – 1216), at Tribhuvanam near Kumbakonam in Tamilnadu. My research proves that the Ancient Tamils were frontrunners in the art of animation and entertainment depicted in the modern day animation techniques portrayed in Cinema.

**Keywords** — Animation, Cinema, Graphics, Frame, Movies.

## I. INTRODUCTION

### A. Animation

Animation refers to the creation of a sequence of images drawn, painted, or produced by other artistic methods that change over time to portray illusion of motion. Before the invention of film, humans depicted motion in static art as far back as the Paleolithic period. The magic lantern is a early predecessor of the modern day projector. It consisted of a translucent oil painting, a simple lens and a candle or oil lamp. In a darkened room, the image would appear projected onto an adjacent flat surface. It was often used to project

demonic, frightening images in a phantasmagoria that convinced people they were witnessing the supernatural. Some slides for the lanterns contained moving parts, which make the magic lantern the earliest known example of projected animation [2].

The history of animation dates back to thousand years. Early examples of attempts to capture the phenomenon of motion drawing can be found in Paleolithic cave paintings, where animal are depicted with multiple legs in superimposed positions, clearly attempting to convey the perception of motion. A 5,000 year old earthen bowl found in Iran in Shahr-e Sookhta has five images of a goat painted along the sides (e.g. Fig. 1).



Fig.1 Paleolithic Cave Painting

This has been claimed to be an example of early animation. However, since no equipment existed to show the images in motion, such a series of images cannot be called animation in a true sense of the world [3].

## II. ARCHITECTURAL EXCELLANCE OF CHOLA KINGS

### A. Iaravathisuvarar Temple

South Indians especially the people of Tamilnadu are well known for their arts and literature. It is an amazing fact that Cholas showed the seed for Animation before thousand years. The main aim of this project is to do research and prove that Tamilnadu's culture and entertainment feature are combined for a show, with the help of example gathered from Chola Temples. The given images taken from Iaravathisuvarar temple, Dharasuram, Kumbakonam in Tamilnadu. This temple was added to the list of great living Chola temple in the year 2004, The great living Chola temple includes the Brihadeswara temple at Thanjavur, The Temple of Gangaikonda colapuram and the Iaravathisuvarar temple at Darasuram all of these temple were built by

the Cholas between the 10<sup>th</sup> and 12<sup>th</sup> centuries CE and have a lot of similarities[6]. Although there are many animation sculptures used in this temple, let us take one as an example. In one of the sculpture Ravana kneeling one leg on the floor and stretching another leg, he is holding Kailasa mountain in his two hands and lifting the Kailasa mountain step by step by lifting it in five frames on his head.

**B. Iconography: – Ravananugrahamurti**

Most of the sculptures having animated sequence in this temple but we are taking a particular sculpture for research. The given image of the sculpture is placed in the right side of wall in vimana (Tower) as a relief sculpture (e.g. Fig. 2). Actually, the relief appears on the bhitti portion and there is no devakostha. Four rows of vertical illustrate the event of Ravana the Kailasa, called Kailasa-uddharna.



Fig.. 2 Source Image -Ravananugrahamurti

According to mythology, Ravana, the demon king of Lanka wanted to lift the Kailasa, abode of lord Siva and take to his country. The demon's strength was such that he was able to lift the great mountain and shake it. Siva, Devi and their retinue were present on the summit. Siva pressed his toe and thwarted the attempt of the demon. Humiliated, he cut one of his hands, made a Vina out of it and sang the samagana to please the lord. Satisfied with his devotion, Siva honoured Ravana by offering the atmalinga.

The second row shows three gods with hands folded in anjalibandha. The third row shows Siva and Uma seated on the hill. The topmost finds a three-headed being with many hands offering anjali to Umasahitamurthi. He is obviously Ravana who offers his prayers to the lord at the end of the drama (e.g. Fig. 3).

**1) Squash and Stretch**

The sample image satisfies most of the basic principles of Animation. The most important principle is Squash and Stretch. The important aspect of this principle is the fact that an object's volume does not change when squashed or stretched.



Fig.3 Main image



Fig.3(a) -Frame 1



Fig.3(b)- Frame 2



Fig.3(c) -Frame 3



Fig.3(d) -Frame 4



Fig.3(e) -Frame 5

It is seen clearly that both the hands are stretched in the first frame and in the frames that follow the length of the hands are a little shorter; while the hands are folded squash and stretch principle is handled (e.g. Fig. 3(a)).

#### 2) *Anticipation*

The right leg of the statue is stretched and the left leg half folded gives the normal physical movement of action before venturing to do any act. Hence the principle of anticipation has been followed ably in the statue (e.g. Fig. 3(a)). Anticipation is used to prepare the audience for an action and to make the action appear more realistic, has been followed here.

#### 3) *Arcs*

This principle can be applied to a limb moving by rotating a joint. When the movement of both the hands are from the bottom to the top an arc is created (an arched & trajectory) (e.g. Fig. 3(a),(b),(c) - (e)). Hence the principle of art serves as a complement.

#### 4) *Staging*

The purpose of staging is to direct the audience's attention and make it clear what is of greatest importance in a scene, as what is happening and what is about to happen. In the series of the statue the four parts are related to one another and they command the attention of the audience without any disturbance. No unnecessary images are there and hence the principle of staging is used here.

#### 5) *Exaggeration*

It is an attempt to magnify things Ravana is attempting to lift the mount Kailash in an image and it is depicted artfully. What is impossible is made possible a

make believe attempt is made here. Therefore the principle of exaggeration has been handled aptly.

The technique of animation rules followed in the modern days with the help of computers. But the ancient Tamils made use of the principles of animation through the stone sculptures. This reveals the non-moving sculpture. Even though this may appear similar to a series of animation images with in a single sculpture. There was no way of viewing the images in motion. It does, however, indicate the artist's intention of depicting motion. Where sculpture are depicted with multiple hands in superimposed positions, clearly attempting to convey the perception of motion.

### III. FRAMES

You would have seen Cinema film roll. From this film roll you will find the same photo still image one after another, but if you see carefully you will find slight different one another in images. Each of one image denote certain movement of position, and this position is called frame. The individual picture image on a strip of motion picture film. Also, one complete screen on videotape[4]. The common method of presenting animation is as a motion picture or video program. This type of presentation is usually accomplished with a camera and a projector or a computer viewing screen which can rapidly cycle through images in a sequence.

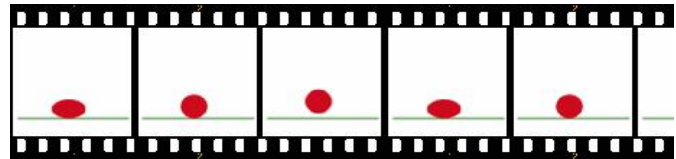


Fig.4 Film Roll

Animation can be made with either hand rendered art, computer-generated imagery, or a combination of techniques. When one image is swiftly followed by another that is only slightly different, we have the impression of seeing both images, superimposed upon each other, as one moving image. This so called persistence of vision is the fundamental principle upon which cinematography is based [5]. The position of each object in any particular image relates to the position of that object in the previous and following images so that objects each appear to fluidly move independently of one another. The viewing device displays these images in rapid succession, usually 24, 25 or 29 frames per second.

### IV. PRINCIPLES OF ANIMATION [7]

- *Squash and stretch*
- *Anticipation*
- *Staging*

- *Straight ahead action and pose to pose*
- *Follow through and overlapping action*
- *Slow in and slow out*
- *Arcs*
- *Secondary action*
- *Timing*
- *Exaggeration*
- *Solid drawing*
- *Appeal*

## V. WARRIOR SCULPTURE

The second example is of a sculpture in Kampaharesvara temple built by Kulottunga –III (AD 1178 – 1216), at Tribhuvanam near Kumbakonam, Tamilnadu, India.



Fig.5 - Source image

There are two statue near the Temple gopuram are found beneath the mahamandapa and they measure roughly 1 foot (e.g. Fig. 5). These statue can be seen when we circumambulate the temple tower. Though the two statues appear to be alike, they differ when they are visualized in cinema film roll as frames (e.g. Fig. 5(a),(b)). A warrior is mounted on a lion and the hands, legs and the shape of the bodies differ under the principle of straight ahead action and pose to pose technique of animation is followed here obviously. Straight ahead action means drawing out a scene frame by frame from the beginning to the end, while pose to pose involves starting with drawing a few key frames and then filling in the intervals later.



Fig.5(a) - Frame1



Fig.5(b) - Frame 2

They have tried to show it one sequence. The animated artistic view of the image clearly represents the frames. From the position of leg, hip, hands and lifting of sword with shield. The principles of animation also satisfied from the structure of man and lion. You can find the idea of animation by artist why design the sculpture.

In the two frames a man's movement in two poses has been brought out further, the movement of the warrior is depicted in a starting position and the principle of arcs is used here. When looked at the surface level the animation is not obvious but a deep glance reveals the different techniques adopted here. Our forefathers have sown the seeds of animation technique in the days of yore and it is reiterated here in the sculptures.

## VI. CONCLUSION

In the modern computer world, we have forgotten to preserve the traditional history and ancient treasure of Tamil culture. Animation concept has roots from the modern technology development. Our forefather already discovered the concept of animation 1000 years before is the proof of research. Our old artists have not mentioned their names in the sculpture. Therefore it is our duty to preserve and safeguard the cultural heritage and sculptures. This is the only way to honor the artists who contributes the valuable sculpture, in our country.

### Footnote

- *Movie* – is a Cinema film, Moving in motion.ame – The individual picture image on a strip of motion picture film. Also, one complete screen on videotape
- *Illusion* – Something that deceives by producing a false or misleading impression of reality.
- *Paleolithic* – Early phase of the stone age, Which appeared first in Africa and marked by the steady development of stone tools.

- Phantasmagoria – A shifting series of phantasms, illusions, or deceptive appearances, as in a dream or as created by of many elements.
- Superimposed – Motion pictures, TV. To print over another image so that both are seen at once.
- Persistence – The continuance of an effect after its cause is removed.
- Cinematography – A motion picture projector or camera.
- Sequence - Motion pictures. A series of related scenes or shots that make up one episode of a film narrative.
- Perception – The are or faculty of apprehending by means of the senses or the mind; understanding

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