

6. Animation

Synopsis

This module provides an introduction to the magical world of animation. It explains some of the basic principles of animation and discusses aspects of storytelling. It outlines the stages in the creation of a short animation that includes storyboarding, character studies, concept art, sound design and animatic.

Lectures

- 6.1 The magical world of animation
- 6.2 Basic principles of animation
- 6.3 How to create a short animation film



Fig 6.1.00

6.1 The magical world of animation



Fig. 6.1.01

Drawing twenty four frames for one second of animation simply means that without a long term commitment and the animator's temperament, one should stay away from this field, however enchanting it maybe. Behind every successful animated film is a person who is out of his or her mind, and behind that person there often is an entire team of lunatics that includes talented animators, musicians, actors and an equally insane financier or patron.



Fig. 6.1.02

Participants having some fun at a storytelling workshop, Animators draw upon the abilities of good storytellers, actors, artists and musicians. Feature length animation is mostly a gigantic team effort, though few animators have created feature length work with very small teams.



Fig. 6.1.03

Students perform for a very young audience to tell a story with puppets. While training to be an animator it is immensely rewarding to strike a friendship with theatre groups.



Fig. 6.1.04a



Fig. 6.1.04b

Illustration is an allied field and many animators begin their journey into animation, by working as illustrators.

Animation is an evocative visual experience when creative imagination fuses with the magic of imparting movement and motion to the inanimate. Animation can make pigs fly, transform frogs into handsome princes, morph guns into roses and angels into hideous demons. The imaginative world of illustrations comes alive as animation breathes life into static lines and shapes.

Unlike the movie or video camera that is restricted by the limitations of physicality, animation allows us to conjure up impossible realms and spaces. A hat may transform visibly to a tree that may in turn become a bird that may turn into a serpent that eats up a plane and changes to a hat in the wink of an eye.



Fig. 6.1.05

A familiarity with materials and forms, the ability to put together armatures and models is a part of the animators training. Before moving to computer software that facilitate 3D modeling, it helps to have a grounding with real materials and models,

The secret of the immense appeal of animation perhaps lies in the eye-witness-realism of such transformation. Breathing life comes with a cost attached and animation is expensive as it involves hundreds of hours of painstaking work, often by very large teams of animators. But the cost is not just an economic cost. The invisible cost is the patience to spend long hours on the light table or on some digital software, drawing, modeling, and correcting the enormous number of in-betweens that make animation plausible. What makes images breathe is the living breath of the animator. Animation would be impossible without the 'animator's temperament'.

Such a colossal effort is best garnered from the efforts of a community and some of the most well-known feature length animation has been possible solely because of large teams of dedicated animators who have come together to share a common dream.



Fig. 6.1.06a

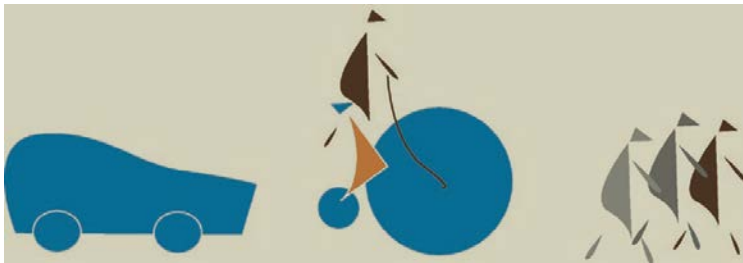


Fig. 6.1.06b

The ability to stylize comes from a familiarity with drawing. An animator has to be a master craftsman when it comes to the fundamentals of drawing.

A Very Brief History of Animation

As with Hollywood films, America has been a centre for animated films.

Winsor McCay (USA) who created, *Sinking of Lusitania* (1918), Emile Cohl and George Melies (France) are regarded as the pioneers of animation. For a long time, Walt Disney's animated films gained immense popularity by being aired on television. Disney was a charismatic personality who created *Steamboat Willie* (1928), *SnowWhite and the Seven Dwarfs* (1937), the first full length feature animation.

Pixar began in 1979 as an unit of Lucasfilm; was acquired by Apple Computer in 1986 and by the Walt Disney Company in 2006. It has produced several feature length animation including *Toy Story* (1995); *A Bug's Life* (1998), *Monsters Inc.* (2001), *Finding Nemo* (2003), *Cars* (2006), and *Ratatouille* (2007). Many of these films have won critical acclaim and have been financial successes.

DreamWorks Studios, was started in 1994 by Steven Spielberg, Jeffrey Katzenberg and David Geffen (SKG), with support from Microsoft co-founder Paul Allen, following Katzenberg's resignation from The Walt Disney Company.

DreamWorks Interactive is a video and computer game developer founded in 1995. DreamWorks Animation has produced some of the highest grossing animated hits of all time, such as *Antz* (1998), *Shrek* (2001), *Madagascar* (2005), *Wallace & Gromit* (2005), *Kung Fu Panda* (2008), *Monsters Vs. Aliens* (2009), *How to Train Your Dragon* (2010), and *Puss in Boots* (2011). Close to bankruptcy.

However, it must be borne in mind that voices that speak gently often say things that have great value. Several other countries, such as Canada, Czechoslovakia, Iran, France, Italy, Japan have created animation films that are outstanding. The Zagreb animation created by artists and animators of the Czech Republic

have a very different flavor than the slapstick storytelling associated with films and animation in America. Norman MacLaren, Carolyn Leaf, Ishu Patel created some very unusual animation for the National Film Board of Canada. In recent times a few animators have gone on to create feature length animations through individual effort.

One of them is the American animator Bill Plympton who created Tune (1992). Jan Švankmajer is a contemporary animator whose work has a disturbing quality about it and does not lend itself to easy interpretations.

The animation industry in India is in its infancy and has the potential to grow. Like any other industry its success shall depend on long term policies and investments in the creation of human resources by the government and private schools and infrastructures for employment by the industry.

Animation films produced in India

Ek Anek Aur Ekta (1974)
Ramayana: The Legend of Prince Rama (1992)
Pandavas - The Five Warriors (2000)
Hanuman (2005)
The legend of Lord Buddha (2005)
Krishna (2006)
Roadside Romeo (2008)
Dashavatar (2008)
Ghatothkach (2008)
Cheenti Cheenti Bang Bang (2008)
Jumbo (2008)
Arjun – The Warrior Prince (2009)
Bal Ganesh (2009)
Lav Kush - The Warrior Twins (2010)
Toonpur Ka Superrhero (2010)
Koochie Koochie Hota Hain (2011)
Alibaba Aur 41 Chor (2011)
Delhi Safari (2011)
My Home is Green (2011)

A critique of the entertainment industry

As with other arts, there is an industrial mode of production that caters primarily to a popular sentiment and sensibility. As these need to cater to some mainstream ideologies, their content must find approval by the dominant ideology of a reasonably powerful group that collectively patronizes such production. The themes and the narratives have to adhere to some average-common-denominator that would permit minor deviations (as long as these stay within the boundaries of what may be considered politically correct by the interest-group). A powerful-interest group in India, would be its middle class which patronizes the entertainment on television and cineplexes. Another interest group that has a feeblar economic might but a tremendous political clout is the large numbers who are clubbed together as dalits, tribals, and the backward castes.



Fig. 6.1.07

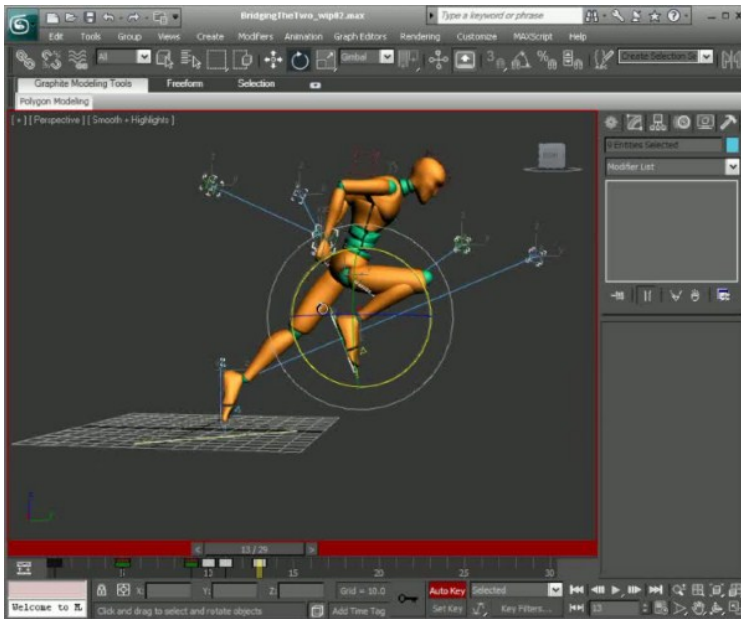


Fig. 6.1.08



Fig. 6.1.09

Technical aspects

Animation works because of a physiological condition called as the persistence of human vision. Every image that falls on the retina is retained for a short instant of time. If this is replaced by a series of almost similar images, each slightly different from the preceding one, they create a sense of motion.

In 1872, Eadweard Muybridge, created a set of remarkable photographic images by taking pictures of moving animals photographed at short intervals. Seeing these 'nearly identical' images one after the other through some device such as the phenakistoscope creates an illusion of motion.

Animation before animation-films

Before the invention of film, animated images were created through many devices such as the Thaumatrope (1824), the Phenakistoscope (1831), Zoetrope (180 AD; 1834), Flip book (1868), Praxinoscope (1877)

Thaumatrope (Sir John Herschel, 1824)

A thaumatrope uses a circular disk with two different pictures on each side. A string through the centre is twirled so that the two pictures appear to combine into a single image. If a hat is drawn on one side and a man's head (in an appropriate position) on the other side, twirling would create an image of a man wearing a hat.

Phenakistoscope (Joseph Plateau, Simon von Stampfer, 1831)

The Phenakistoscope is a disk with images, around the center of the disk. Slots cut out of the disk enable the viewing of images as the disk is rotated. The illusion of animation is created with the help of a mirror that reflects the drawings as they move past the slots.

Zoetrope (William George Horner, 1834)

The zoetrope operates on the same principle as the phenakistoscope but does away with the requirement of the mirror and allows several people to view the animation.

Flip book (John Barnes Linnet, 1868)

A flip book is a small booklet, bound on one edge. An action sequence is drawn near the unbound edge, over a set of pages. Each frame differs marginally, from the previous one. A viewer bends the book and releases the pages so that each image appears momentarily and creates an illusion of motion. For example a flip book sequence of a bud blooming into a flower could begin with a drawing of the bud and over a set of frames bloom into a fully-opened flower. Flipping the pages of the book creates an animated effect of the bud blooming open. Pages that are slightly stiff make the flipping action easier.

Praxinoscope (Charles-Émile Reynaud, 1877)

The praxinoscope combines the cylindrical design of the zoetrope with the viewing mirror of the phenakistoscope.

Animation Techniques

Stop motion

The object is moved in small increments between individually photographed frames, creating the illusion of movement when the series of frames is played as a continuous sequence. Dolls with movable joints or clay figures are often used in stop motion for their ease of repositioning. Stop motion animation using clay is called clay animation or "claymation".

Cel-animation

The invention of celluloid film led to cel animation. Transparent cels are layered on a background and carry the figures and objects being animated. Each frame is photographed using a camera mounted on a stand.

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CGI Animation

The invention of digital technology made certain parts of animation easier, but the fact remains that the power of computers has to be modulated by the effort of accurate modeling, texturing, lighting and camera movement – all of which can be as time consuming as conventional animation methods. CGI animation still adheres to many of the principles of traditional animation and is as time-consuming. The first feature film done completely in CGI was Toy Story, produced by Pixar.

A principal difference of CGI Animation compared to traditional animation is that drawing is replaced by 3D modeling. Most CGI created films are based on animal characters, monsters, machines or cartoon-like humans.

Web animation

This includes the use of animation to make web-based pages more dynamic. making the page livelier with shockwave and flash. Bitmap files – jpegs and gifs. Java applets.



Fig. 6.1.10

Experimental Animation

Some animators use materials such as sand, glass beads, paper cups and manipulate them, recording each change with a camera to create interesting experimental animation. Norman McLaren, Carolyn Leaf and Ishu Patel have created very interesting films with unusual materials.



Fig. 6.1.11

Japanese animation, known as anime, derives much from the characters found in Manga comics.