Principles of Animation

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Animation

Animation refers to the rapid display of a sequence of images in order to create an optical illusion of movement. The optical illusion of movement is created due to the phenomenon of persistence of vision.
Introduction

Between the late 1920's and the late 1930's animation grew from a novelty to an art form at the Walt Disney Studios.

With every picture, actions became more convincing, and characters were emerging as true personalities.

Audiences were enthusiastic and many of the animators were satisfied, however it was clear to Walt Disney that the level of animation and existing characters were not adequate to pursue new story lines-- characters were limited to certain types of action and audience acceptance notwithstanding, they were not appealing to the eye.
Introduction

It was apparent to Walt Disney that no one could successfully animate a humanized figure or a life-like animal; a new drawing approach was necessary to improve the level of animation.
Introduction

0 Disney set up drawing classes for his animators at the Chouinard Art Institute in Los Angeles under Instructor Don Graham.

0 When the classes were started, most of the animators were drawing using the old cartoon formula of standardized shapes, sizes, actions and gestures, with little or no reference to nature.
Introduction

0 Out of these classes grew a way of drawing moving human figures and animals.

0 The students studied models in motion as well as live action film, playing certain actions over and over.

0 The analysis of action became important to the development of animation.

0 Some of the animators began to apply the lessons of these classes to production animation, which became more sophisticated and realistic.
Introduction

0 The animators continually searched for better ways to communicate to one another the ideas learned from these lessons.

0 Gradually, procedures were isolated and named, analyzed and perfected, and new artists were taught these practices as rules of the trade.

0 They became the fundamental principles of traditional animation ➔ 12 principles of animation
Disney’s 12 Principles of Animation

The following 12 basic principles of animation were developed by the 'old men' of Walt Disney Studios, amongst them Frank Thomas and Ollie Johnston, during the 1930s.
The Nine Old Men
12 Principles of Animation

Of course they weren't old men at the time, but young men who were at the forefront of exciting discoveries that were contributing to the development of a new art form.
12 Principles of Animation

These principles came as a result of reflection about their practice and through Disney's desire to devise a way of animating that seemed more 'real' in terms of how things moved, and how that movement might be used to express character and personality.

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Marge Champion was hired as a teenager to be the model for Snow White. Walt Disney sent his scout to her father's dance studio and she was amongst three chosen, and eventually, became the real Snow White. A young girl's dream role, she was dressed as Snow White and danced and posed for animators who echoed her movements in their drawings for the animated 1937 movie.
The 12 Principles of Animation

1. Squash and Stretch
2. Anticipation
3. Staging
4. Straight Ahead & Pose to Pose
5. Follow Through & Overlapping
6. Slow In & Slow Out
7. Arcs
8. Secondary Action
9. Timing
10. Exaggeration
11. Solid Drawing
12. Appeal
Squash and Stretch

The technique used to depict exaggerated animated motion. The point of squash and stretch is to make the motions larger than life, rather than more swift, realistic, and sometimes unnoticed in passing observation.
Anticipation

A concept used to prepare the audience for an action, and to make the action appear more realistic. The anticipation is the precursor to the main action. A visual hint that is given to the viewer to let them know what’s about to happen.
The positioning of characters in a scene for maximum emotional content and clear readability of actions. This can be done in various means, such as the placement of a character in the frame, the use of light and shadow, and the angle and position of the camera.
Staging
The technique of animating in order, from beginning to the end of a scene, to achieve a natural flow from one drawing to the next. Not as easily controlled as the pose-to-pose method, straight ahead animation requires strict attention to maintaining of volumes and sizes, but can result in very fluid looking movement.
Straight Ahead
Pose to Pose

The method of animating by establishing key poses first, and then going back in to complete the breakdowns and inbetweens. Size, volumes, and proportions are controlled better this way, as is the action.
Follow Through

Follow through is the termination part of an action that shows how one part leads organically to the next until the action is resolved.
Overlapping

This principle refers to the actions that indicate that not all parts of a character arrive at the same time, and can go past the point of arrival and settle back. Used to indicate weight, movement of clothing, hair, etc.
Slow In and Slow Out

Slow-in means slowing down the speed of an action when reaching a main pose. Slow-out means accelerating again upon leaving a main pose.
All actions, with few exceptions (such as the animation of a mechanical device), follow an arc or slightly circular path. This is especially true of the human figure and the action of animals. Arcs give animation a more natural action and better flow.
Secondary Action

An action animated in addition to a major action, used to show nuance within the main idea. For example, a secondary action could be a character tapping his foot impatiently to a faster rhythm.
Timing

The process of determining how long each drawing or position should be on screen, based on the knowledge that 24 frames equal one second of screen time. Correct timing makes objects appear to abide to the laws of physics. This is represented by how many frames an animator assigns to a given action.
Exaggeration

An effect especially useful for animation, as perfect imitation of reality can look static and dull in cartoons. The level of exaggeration depends on whether one seeks realism or a particular style, like a caricature or the style of an artist.
Solid Drawing

Solid drawing is using drawing techniques to make a flat, two dimensional object, appear to be a solid three dimensional mass. This includes the use of shading and shadow to make objects appear to have depth, and the illusion that the character is in space and not on a sheet.
Solid Drawing
Appeal

Appeal is the visual quality that makes characters (and objects) attractive, interesting, stimulating. A character who is appealing is not necessarily sympathetic – villains or monsters can also be appealing. The important idea is that the viewer feels the character is real and interesting.

"I try to build a full personality for each of our cartoon characters - to make them personalities."

Walt Disney
Animation

“Animation can explain whatever the mind of man can conceive. This facility makes it the most versatile and explicit means of communication yet devised for quick mass appreciation.”

0 Walt Disney