

# Introduction to Computer Animation

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## Lecture 4

## More History...

1940's onwards

### 1940's

- Disney
  - Dumbo (1941)
  - Bambi (1942)
- Walter Lantz
  - Woody Woodpecker
- Max Fleischer
  - Popeye
  - Superman
  - Gulliver (feature length)
- William Hanna & Joseph Barbera
  - Tom & Jerry
- UPA founded 1944
  - Mainly educational and political films until later in the decade
- Japanese animation devoted to propaganda during the war years

### 1950's

- United Productions of America (UPA)
  - Gerald McBoing-boing
  - Mr Magoo
- Animated cartoons began to change stylistically
  - Abstraction and simplification
  - Animation being made more cheaper
- Hanna-Barbera
  - Founded specifically to service the demand for short TV animation
- Many big studios begin to close their animation departments



### 1960's

- Hanna-Barbera
  - Flintstones
- DePatie-Freleng
  - Pink Panther
- Halas & Batchelor
  - Animal Farm (1964 – first British animated feature film)
- Walt Disney
  - b. 1901, d. 1966
- Warner Animation closes (re-opens in the 90's)
- Jan Svankmajer Prague, Czechoslovakia
  - The last trick of Mr. Schwarzwald and Mr. Edgar



### 1970's

- Ralph Bakshi
  - Fritz the cat
    - First 'X' rated cartoon (1972)
  - First attempt at an adaptation of Lord of the Rings in animated form (1978)
- First UK animated cartoon series
  - Roobarb (1974)



# Animation

## 12 Principles

## 12 Principles

Developed by a group of early Disney animators called the "9 old men"

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

## 12 Principles (1-3)

- ❑ Squash and stretch
  - Weight and flexibility
  - Makes natural, animal objects look less rigid
- ❑ Anticipation
  - Building the audiences expectation
  - Preparing the audience for an action
- ❑ Staging
  - Drawing the audiences attention to the action through the design of the environment

## 12 Principles (4-5)

- ❑ Straight Ahead Action and Pose to Pose
  - Different approaches:
    - ❑ Straight ahead – no keyframes, can give fast flowing action
    - ❑ Pose-to-pose – keyframed animation
- ❑ Follow Through and Overlapping Action
  - Movement of parts of a body after the body has come to a stop, such as swinging hair or arms
  - Overlapping action is action happening along with the main action – e.g. Arms swinging or head bobbing from side to side when walking – often cyclical action that works within other cycles

## 12 Principles (6-8)

- ❑ Slow In and Slow Out
  - Easing
- ❑ Arcs
  - Avoid straight line movement of anything natural – looks too unnatural/mechanical
- ❑ Secondary Action
  - Action that adds to the illusion of life of the character

## 12 Principles (9-10)

- ❑ Timing
  - The time taken to do things
    - ❑ Must be believable/realistic
- ❑ Exaggeration
  - Used to emphasise an action
    - ❑ Makes some action more exciting or funny – often used with squash and stretch
    - ❑ Can be extreme or subtle

## 12 Principles (11-12)

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### □ Solid Drawing

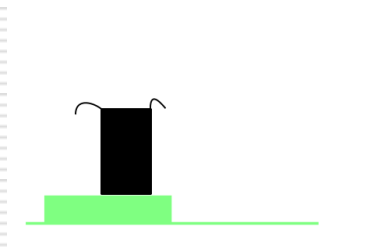
- Giving characters 'three-dimensionality'
  - Characters should look believable, even simple characters should avoid looking too symmetrical
    - Important in 2D and 3D character development

### □ Appeal

- Characters should be interesting – not necessarily attractive
  - Characters should look 'real' within the environment in which they exist
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## The 12 principles (OK... maybe just some of them!)

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## When to use the 12 Principles?

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- Whenever you do any sort of animation, all, or some, will apply
  - Primarily associated with character animation
  - Think about them whatever sort of animation you do
  - Look at completed animation and judge it against how successfully it has fulfilled the relevant principles
  - You'll eventually be doing animation and applying the principles without realising it!
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## Next Week

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- Lecture as usual
  - Lab time given over to the first assessment
  - You must be able to access Blackboard for this assessment
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## Today's Lab

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- More Flash
  - More advanced animation with guides, keyframes, morphing, and eases
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