

Art 384: Introduction to 3D Animation

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Lecture 5

Schedule

- Look at Assignment A, crit
- Give Assignment B
- Review: animation
- Animation and physics
- 3-pass animation

Review

- Animation according to Neal
 - Why not? It's just another angle for crits
 - All that timing and squash & stretch stuff still works.
- Animation = Acting + Physics
- Acting = Focus + Breathing + Psychology
- Physics = ??

Critiquing acting

- Does the person really look like they're in the situation depicted?
- Reaction timing wrong?
- Emotional actions appropriate?
 - To what?
 - Backstory

Backstory

- Things happened before the current scene
- If the actor can convey both their reaction to current events AND their personal history, the performance is more complex
 - complex is more interesting
- Someone has to make up the personal history

Physics for Artists

- Newton's 3 laws of motion
 - Inertia
 - Force = Mass * acceleration
 - Action and reaction

Inertia, you're familiar with

- Things in motion continue in motion
- Things at rest stay put

$$F = M * A?$$

- Start with position
- Velocity is change in position per second
- Acceleration is change in velocity per second

$F=ma$, second slide

- The bigger the object, the harder you have to push
- The bigger the push, the faster it accelerates
- Gravity and bricks!
- Making things look small, or big, or fluffy

Action and Reaction

- You can't push something without it pushing back
- Central to martial arts, jumping, basketball, bowling

3-pass animation

- First pass: establish positions throughout scene
 - NO details: rotation, deformation
 - With A & B, it's just position
- Second pass: Secondary animation
 - Elbows bend, heads turn
- Third pass: everything else

Let's do one

- Fire up Moe and Joe
- Joe is watching football.
- Moe wants to play Legos, something