

# Cinematography

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## Overview

- Virtual Camera Terminology
- First-Person Perspective
- Third-Person Perspective
- Aerial Perspective
- Context-Sensitive Perspective

• Based on Adams and Rollings, 2007, "Fundamentals of Game Design"

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## Virtual Camera Terminology

- Moving Camera
  - **Dolly**: Forward/Backward (follow avatar)
  - **Truck**: Lateral (side-scroller)
  - **Crane**: Vertical (up/down)
- Stationary Camera
  - **Pan**: Swivel about vertical axis (heading)
  - **Tilt**: Swivel to look up and down (pitch)
  - **Roll**: Rotate around forward axis through lens

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## First-Person Perspective



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## First-Person Perspective

- Advantages
  - Fewer animations needed.
  - No AI needed for camera control.
  - Easier for users to aim at things.
  - Sometimes better for navigation and interaction.

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## First-Person Perspective

- Disadvantages
  - No fun customizing or evolving an avatar.
  - No avatar expressions visible.
  - No cinematic camera angles for dramatic effect.
  - Sometimes worse for navigation.
  - Motion sickness.

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## Third-Person Perspective



Mission to France

Dead Reefs

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## Third-Person Perspective

- Camera Behavior when Avatar Turns
  - Always behind avatar (chase view)
    - Can always see where the avatar is going.
    - You never see avatar side or front.
    - Can produce motion sickness during quick movement.
  - Camera reorients behind avatar more slowly
    - You can see avatar side or front sometimes.
    - Less dizzying.
  - Camera reorients behind avatar only at stopping
    - Least dizzying, but can't see obstacles or enemies in the avatar's way!



Toy Story 2

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## Third-Person Perspective

- Intruding Landscape
  - Render the landscape semitransparent
    - User becomes aware of the blocking environment
  - Move closer to avatar, crane up and tilt down
    - Shows the area around the avatar
  - Place camera immediately behind avatar's semitransparent head
    - User can see what is in front

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## Third-Person Perspective

- User Adjustments
  - Manual adjustment often with left and right buttons that circle the camera around the avatar.
  - Just a quick fix, not a real solution.

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## Aerial Perspective

- Gives priority to the environment as a whole rather than one particular avatar. More common in “strategic” environments.



Age of Empires III

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## Aerial Perspective: Top-Down

- Advantages
  - Familiar “map” type of perspective.
  - Easy using 2D graphics.
- Disadvantages
  - Only one angle: Roofs, Tops of heads, ...
  - Distances user from the events:  
More like a simulation than a real place.



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## Aerial Perspective: Isometric

- Advantages:
  - Shows all three dimensions at once.
  - Brings user closer to the environment.
  - People become more visible.
- Disadvantages
  - Distorts reality - not real perspective.
  - Only allows trucking or dollying camera moves.



Ultima Online

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## Aerial Perspective: Free-Roaming

- Advantages
  - True perspective.
  - More freedom for the camera.
- Disadvantages
  - Difficult to implement camera control.
  - May be hard to teach users to do manual control.



Dungeon Siege

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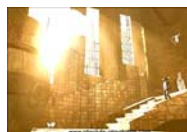
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## Context-Sensitive Perspective

- Intelligent camera movement
  - Based on what is going on in the environment or story.
  - Based on mood and required dramatic effect.



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