

Game AI conference Paris 2010 – Animator’s notes

Workshop

(with Ken Perlin & Bruce Blumberg)

Perlin: Free animators from just creating blocks of animation that are sewn together, let them play tools like instruments.

Blumberg: You have a contract with the player: This is the quality you can expect. Stick to that consistently (visual style, char depth) ie: How realistic can I make it move? Match visuals to that.

Characters **looking around** - HAVE TO GET THIS RIGHT.

P: **Looking is a primary action.** It’s important.

Traditional look at = 1 joint, is **BAD**

Head look = body look (twist neck & torso) with constraints (avoid uncomfortable poses) + arcs in movement

Be aware of body language cues in where you are facing with your body. Completely facing = aggressive, for example.

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Question: How to do good timing in games?

Phil Carlisle: Do *something* immediately. Full reaction can come later. Gave example of comparing two games with same timing on turn animation. Only difference was a dust cloud particle effect that hit immediately upon launching the action, which made it feel more responsive...

Blumberg: Stand up for yourself! Animators should be in charge of timing, not designers or coders.

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Excluding body language only 7 emotions in face... rest is context.

Touching, grabbing : don’t forget acting is going on at the same time. Use simplest IK you can get away with. Getting into position first is the hard part...

Where is the player looking? [put energy where it counts]

Ask: Are you controlling a puppet or a character? [Puppet is fully player controlled, character should only do appropriate things]

P: Feet exist to support body - where to put feet & when, to minimize effort..

B: talked about how in World of Zoo they found making koalas fall or 'teleport' (from one tunnel to another) to get to the player proved better for gameplay than having them climb down correctly but SLOOOWLY...

"Don't try to solve every problem with one system."

The transition is the important part (in a blend tree), **begin & end, anticipation & response.**

Asked about anticipation (and the conventional wisdom of avoiding it in games): antics work great on NPCs, less so on avatars. An animator in the group suggested: when pressing a button *the player* is doing the anticipating.

Some interesting ideas also came out of the group exercises (looking at pre-rendered cinematics, discussing how these actions could have been done in-game):

Walking & Scanning: Look at what, why? Priority? Random? Credibility... **If it seems like the character should've noticed it, make sure they do.**

Running & looking back : look when it's physically convenient.

Stopping: Do long transition if you can (there's space, and no interruption), simple if not.

Walking on roof: try to not die... hips down, hands out, head wants to stay uphill.

Falls: Nudge ragdoll towards closest existing animation for seamless transition, rather than doing a straight blend at the end of the fall, have the character already move towards a valid animation pose while still in ragdoll.

Reaction to sound: How you react depends if you think you're alone or not.

Conference

(missing some sessions)

Day 1

Design Panel - Stephane Bura, Noah Falstein, Jurie Horneman

Start with the simplest solution and iterate from there.

Recommended: Jesse Schell "Book of Lenses"

Intimate Conversations with animated characters - Bruce Blumberg

Can you create the illusion of interacting with a sentient being?

“Rapt attention & engagement from NPC is key.”

Playing fetch is fun, *why?* ... Dog totally focused & loving the game

“Because of you the dog is happy.”

interaction = a conversation

Character is worthy of attention because it cares what happens to it.

Amygdala, the part of the brain that makes snap decisions: good or bad?

Separate immediate, emotional gut-reaction from considered, conscious response...

Explicit Anticipation & Follow Through AI states (animator has all the time they want)

NPC should communicate expectation. Shows it understands and cares about what’s going on.

React to result: Better than expected? Worse? Or was the expectation met exactly?

[also see Gamasutra article: http://www.gamasutra.com/features/20060216/blumberg_01.shtml]

Do just enough, no more. Let player read into the rest. Simple behaviours will seem far more complex if you let players fill in the blanks...

Navigation Loop - Mikko Mononen

“It’s not about finding the perfect path, but finding interesting paths.”

Crowds & Pedestrians w/out bumper car syndrome - Mononen, Perlin, Perrier & Fort

Perlin: If your AI pathfinding is creating awkward situations the best animation system in the world can’t save it.

Inside Your Player’s Mind - Baylor Wetzel

Complicated systems often seem to have same results as simple ones.

Player perception of strategies may not reflect actual complexity eg (attack order) “LongestName” and “Alphabetical” were rated as being fairly sophisticated strategies by unwitting test-subjects.

[My conclusion: If you’re going to make a nifty complex system, make it so the player can tell the difference.]

Day 2

The Evolution of Battlefield: Bad Company's AI - Mikael Hedberg

Singleplayer: cheat = win ... if it helps the player experience, fake all you want!

teleporting near player (when out of sight), fail on purpose (shoot over player, etc)

80% bulk AI, 20% memorable moments

Key interaction is death so improving death anims was key - **frequent feedback must be satisfying!**

Reacting to what the player is doing yielded more fun behaviour than planning ahead since enemy soldiers have short screen-time.

Building Visual Toys That Don't Break – Blumberg, Johansen, De Caster

B: (Agreeing with Mikael) Get the core working then add memorable touches.

D: (on Total War) Have long term goals but know when to abandon goals that are no longer feasible or relevant.

B: Set priorities within a context (not globally)

D: Play the game at least half a day every week! (and make it parts you're not working on)

B: "The brain is just a bag of tricks and cheats that mostly work."

Human Territoriality in EVE Online characters – Claudio Pedica

Characters (in most games) are disconnected from the situation, unaware of social context, like furniture..

Social structure influences behavior, characters cluster in groups depending on relationships.

[some diagrams of groups] Schefflen '76

Keep center of conversation shared evenly.

territorial awareness, keep personal distance, equality & cohesion

In-game prototype result: Join conversation, buddies make room for you... alternatively, strangers conversing in the way, you walk around.

Procedural Animation (and why it matters) - Ken Perlin

People are obsessed with people.

“Plot is the drugged meat you throw over the fence to put the dog to sleep so you can rob the house.” (It’s about the characters)

The Sims are defined as dolls, not characters (which is why we accept their symbolic acting)

“Locally things have to make sense” ie. You can have an outlandish concept, but the way you build a world around it has to be believable... (which is how sci-fi works)

Story branching? NO... Use **LAYERS** instead.

[shows crazy story-arc modifying app, visualized as curves, increasing detail w/each new smaller curve i.e. plot element, **story as fractal**]

BUT ... this will only work if you have good actors to play it out!

[while talking, Perlin demoed various prototypes showing procedural animation on cubes, faces, feet and complete characters, most of which can be found on his website <http://mrl.nyu.edu/~perlin/>]

Animators should be driving procedural animation (like a ‘stylesheet’ on top of content)

Direct (not just animate) interactive actors!

Conference slides can be found here:

<http://aigamedev.com/open/coverage/paris10-report/>