

# More moving pictures

Animation can tell players more than what to shoot next, says **Christiaan Moleman**...

**G**ames are looking better and better. The game worlds and the characters that populate them are becoming ever more detailed in their movement and appearance.

Yet despite this growing sophistication, there has been little change in how animation is used in games. A walk cycle with a million polygons is still a walk cycle. It often seems that animation is treated simply as content to put in the game, with little or no bearing on the interactive experience.

It doesn't have to be like this. What if animation in games was not just eye-candy but an integral part of gameplay?

Far too many games still rely on cut-scenes to tell stories and icons and text to tell the player what's happening around him. Why do we need menus to tell us what the characters should be telling us instead?

## INTERACTIVE ANIMATION

Imagine a strategy game. Units start out as feeble new recruits, and turn into battle-hardened veterans as they gain experience.

But what if you could see that experience in the movement of the characters? What if new recruits run around nervously, trying desperately not to get butchered, while the more experienced warriors jog calmly through the carnage?

In a hectic battle where split-second decisions need to be made at every turn, visual feedback like this is invaluable.

Ed Hooks explains in *Acting for Animators* that, "Scenes begin in the middle". Whatever

Some games have experimented with the interactive use of animation...



*Grim Fandango* proved that gaze direction is great for indicating what the player can interact with. When Manny, the main character, passes anything of interest, he turns his head to look at it.



*Half Life 2* takes the traditional linear cinematic and puts it inside the game. What it does really well, in terms of interactivity, is having NPCs acknowledge your presence by actually looking at you.



Both *Black & White* and *The Sims 2* use animation extensively for feedback. You can tell if your character is feeling happy, sad, tired or hungry. Why aren't more games doing this?

the scene is, something happened before it and something will happen after it. Taking this into account makes the 'middle' that much richer.

You see a character running in a game. Where did he come from? Where is he going? What is his goal? How the person runs will differ dramatically depending on the answers.

Consider the two images below, *figures 1* and *2*. The first suggests that the character is running *towards* something, while the other character seems to be running *from* something. A player might see this and conclude there is something interesting in the direction the first is headed, whereas it's probably wise to not go in the direction the other one came from – or at least draw his sword in advance.

In RPGs, the objective is usually to develop skills in combat so that you can take on increasingly dangerous

foes. Early in the game, it often happens that you run into enemies that are too tough for you, while later in the game, what was previously a worthy opponent becomes a pushover.

Unfortunately, as a player, it's very difficult to gauge whether an enemy is too powerful before that power has been experienced first hand.

What if, depending on the relative power of an enemy, on your approach that enemy either cowers and looks around frantically for a means of escape, or else takes on a threatening stance and growl? I think it won't be difficult for a player to guess which is the more dangerous.

Another thing you often see in RPGs is popularity stats, where your action in the game affects the attitude of other characters towards you. Help them and they'll like you, harm them and they won't. A game could show this in the way that

people greet the player – one might smile broadly and hold out his arms as if to hug you, another might frown and cross his arms. *Fable* has made real progress in this direction, but the idea is there to be taken much further.

Of course, you don't just want to show how NPCs feel about the player – you want them to show how they feel about each other too. Most character-centric games involve at least some degree of social interaction. The player has to understand these relationships if he is to manipulate them.

Let's say you walk in on a man and a woman as they part ways. The woman is stuck in an idle cycle and the man is walking casually away. You're not really getting any information out of this.

But what if they hold hands, gazing intently into each other's eyes – a final farewell before battle, like Hector and

■ Figure 1: Running to...



■ Figure 2: Running from



## MINIBIO



Christiaan Moleman is a student of games art, animation and design about to graduate from Teesside University. He loves games and animation, and hopes to be making both professionally in the not too distant future.

Christiaan would give the Space Invaders evil smiles as they reached the bottom of the screen.



■ Figure 3: "Just go!"

Andromachè? Or what if she stands facing away from him, her arms crossed and an angry look of determination on her face, the man holding out his hand begging her to come with him (see the examples above).

Either way, you're telling the player about these characters. You're delivering the narrative, but more importantly – if the characters' emotions and motivations have any bearing on gameplay – you're giving the player crucial information.

### WALK THIS WAY

Games do not have the luxury of unique animation for every scene in the way film does, but by cleverly utilising cycles, transitions and short actions, there is not much game characters cannot express.

All you need are different versions of the same building blocks. A player with full health walks energetically, an injured player limps and staggers, and a tired character drags his feet. Or imagine a stealth game. Two guards stand outside separate entrances, each stuck in an idle cycle. The first scans the environment for intruders, the second is trying hard not to fall asleep. Which entrance do you think the player will pick? Or how about if when the player picks up something useful, he briefly goes into a happy walk?

A lot of these ideas would only work in a third person

game, as the player's character would have to be on screen for you to learn anything from his animation. However, the first person view has the advantage of enabling NPCs to directly address the player, which leaves room for a lot more subtlety in their movement. You could have the same subtlety with NPCs in a third person game, but with a freely moving camera the player probably won't notice unless the camera specifically focuses on those characters.

This question of clarity versus subtlety is tricky. Do you risk ruining the atmosphere with obvious over-acting? Or do you keep it subtle in the hope that the player will notice anyway, if only subconsciously?

The solution is probably to have a bit of both.

### A HUMAN PERSPECTIVE

If we're going to figure out how to make characters move more tellingly, we need to look at body language and the psychology that drives it.

In his book *Peoplewatching*, Desmond Morris talks about something called 'Postural Echo'. Among friends, people unconsciously match their postures to each other, creating a comfortable atmosphere of equality. When somebody adopts a noticeably different posture, it ruins the mood.

This could be used to great effect in games. If characters



■ Figure 4: "Is that your sword, or are you...?"

## TUTORIAL TIPS

- Always ask yourself what information the animation can convey that would be useful or interesting to the player?
- Show the attitudes of NPCs towards each other and the player.
- Consider how a character's 'line of action' is affecting his appearance.
- If you want the player to notice, make it clear.

carry themselves similarly to the player, he will be more inclined to like them than he would those with more contrasting postures. (You could factor this into the aforementioned popularity contest as well – as the ice melts, characters start adopting similar postures to the player.)

Another thing we could use is 'Gaze Behaviour', which describes the length and frequency of eye contact. Does the NPC meet the player's gaze, or avoid it? And how long before eye contact is broken? A subordinate does not hold the gaze of a superior. Instead he looks away, only briefly glancing at the other to check for reactions. A dominant individual could stare threateningly, or casually look away, ignoring his subordinate.

If the player looks at someone for too long it could well be perceived as a threat. If the

player constantly looks away, an NPC might decide that he is bored, or perhaps shy. Though probably not a feeling that games are likely to evoke, shyness would be an interesting emotion to roleplay.

Traditional animation also offers some interesting insights. If we go back to the 'running to and from' example, the only real difference between the two movements is the so-called 'line of action' – the line that flows through spine, head and limbs to form a pose.

When running to something, the body leans forward, the head leading the way with intention and purpose. Running away from the scary monster, the body leans back, the panicking head trying hard to keep up with the legs.

### REEL THEM IN

These are just some of the many fascinating behaviours that could be used to inform and immerse the player. From *Peoplewatching* to *The Illusion of Life*, there's a wealth of ideas out there just waiting to be used interactively. The question in the end is not how can we make animation look better – it's how can we use animation to make better games?

■ [www.ninjadodo.com/anim](http://www.ninjadodo.com/anim)

All the images shown in this feature are taken from a project Christiaan has been working on. You can find them in animated form on his website, reached as above.



■ Figure 5: "Don't hurt me!"



■ Figure 6: "Bring it on!"