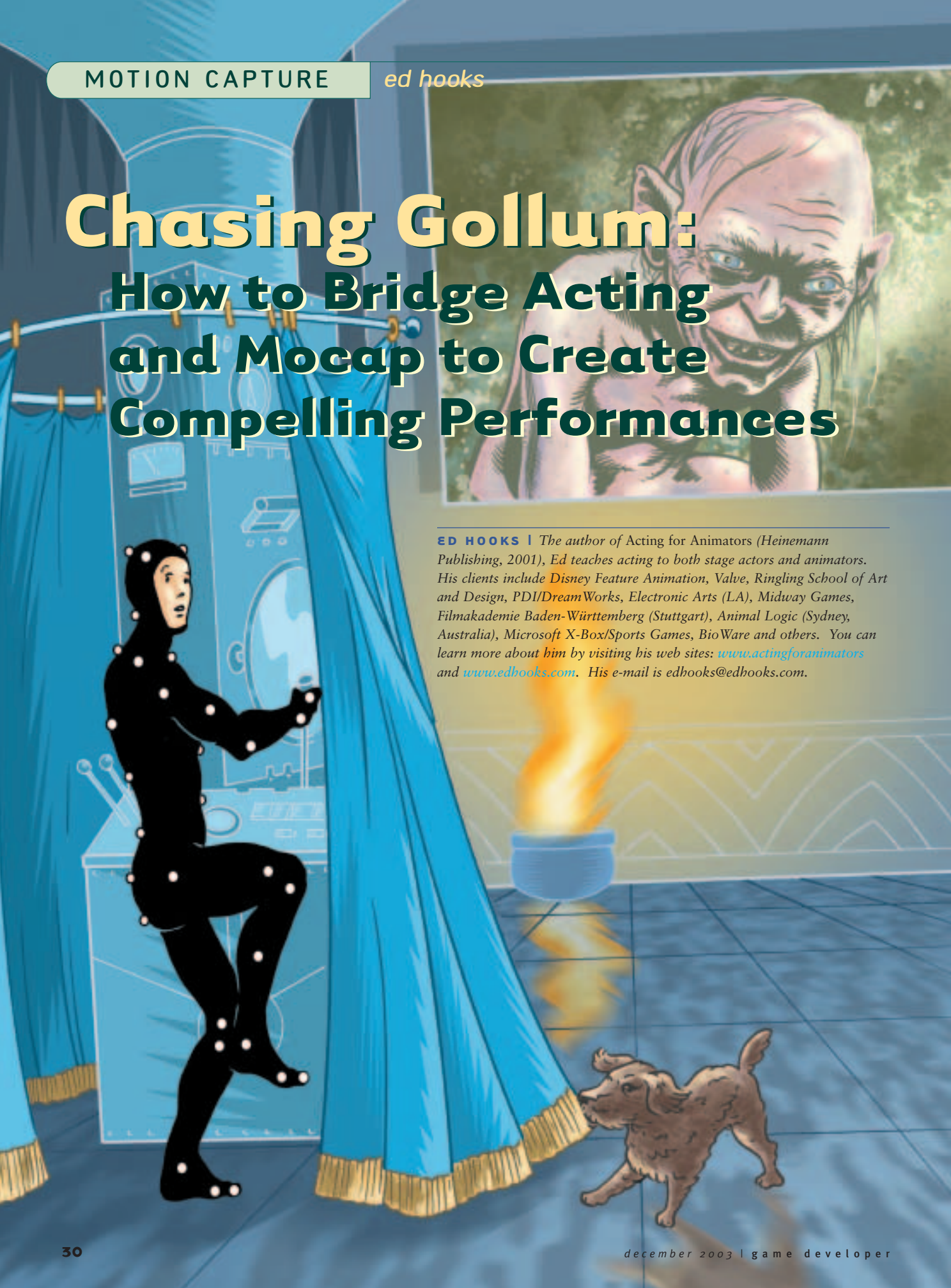


Chasing Gollum: How to Bridge Acting and Mocap to Create Compelling Performances



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Mocap, the strange sister in the attic, is finally being brought downstairs. Animators may not like their sibling very much, but they're learning to live with her. After years of awkward silence interrupted by angry outbursts, everybody can at least sit in the same room and watch *The Simpsons* together. And by the way, that's Gollum you see crouched in the corner over there. We can probably thank him and the team at Weta Digital for this new living arrangement.

The relationship between animators and motion capture specialists is strained for several reasons. First of all, the respective job functions are a classic left-brain versus right-brain conflict. The technical capture of motion data is arguably more science (left brain) than art (right brain), while animation, regardless of whether it is 3D or traditional, is more art than science.

Second, if peace in the family was part of the goal, mocap got off to a perfectly lousy start. It was sold as the expensive new family car that anybody at the company could drive if they had a set of keys, even if they only had a learner's license. Several years ago, someone got up at the Game Developers Conference and said that it doesn't matter if you are a producer, programmer, or animator, if you're directing mocap, you are Steven Spielberg or James Cameron. Yeah, right. And if I ride a bicycle, I'm Lance Armstrong. Given the production-quality demands of today's consumers, it is essential to recalibrate the game industry's perspective on acting. A company's animators cannot make good acting out of bad mocap.

Let's repeat that: Animators cannot make good acting out of bad mocap.

Having taught at a lot of game companies, I've perceived a systemic schism between the animators and the programmers and between animators and mocap. Given the complexity of programming that goes into the typical game nowadays, plus the astronomical costs of game development, this divide is understandable. But it's a schism that needs to be bridged going forward. More often than not, when I teach a class to game animators, someone will say to me afterward, "Gosh, if only Sam the programmer had been here," or, "I sure wish the mocap people were here. They were working today." The goal is to get the entire production team, from designers to animators, on the same page. But because animators are more right-brained than many of the other developers, it's a difficult challenge.

In an effort to bridge this creative schism, this article presents a collection of acting pointers to mocap developers, regardless of the system used or the size of the company.

Good Acting Isn't as Easy as It Looks

Several years ago, when I went to teach a class at a game company, one of the producers took me into his office to explain what he wanted the class to accomplish. He loaded up one of their current games and started playing it, telling me that he had personally acted out much of the mocap on the screen. He explained that he was a better actor than others in the company, which was why he did it himself. Then he put down the controls and demonstrated how a "good actor" takes a bullet and how a "bad actor" takes a bullet.

I stood there with a silly agreeable grin on my face as this fellow took bullets and did falls on the carpet in his office. He wanted me to teach everybody else in the company to do it like he did it. There was nothing I could do but keep grinning and nodding my head in agreement. I couldn't very well tell him that what he was doing didn't have much at all to do with acting. He may have been the Bill Gates of games and a prince among men, and I'm positive he meant well, but he was not an actor. It was a classic case of someone underestimating the art.

It is true that some people have a natural feel for acting in the same way that Eric Clapton has a natural feel for music or Seabiscuit had a natural feel for racing. However, acting is not usually something a person can do without training. Peter Jackson understood this when he hired classically trained actor Andy Serkis to help create Gollum for his *Lord of the Rings* movie trilogy. The realization of that character was a watermark in animation history, a true collaboration between an actor and the animators. Unless they were all at the top of their form, you wouldn't have had a Gollum.

When I first saw that character come slithering out of the rocks, my jaw dropped. The earmarks of a good actor are all over the place. A prime example is the way Serkis obviously understands Michael Chekhov's concept of the psychological gesture (see *Lessons for the Professional Actor* in For More Information). When Gollum is being extra crafty, note what he's doing with his arms and hands. Those are psychological gestures, and they create a complex emotional response in the viewer, capitalizing on the fact that our sense of sight is more powerful than our sense of hearing.

Casting Is Half the Battle

Good performance animation in a game requires that you begin with a skilled performer. It makes sense to consider casting a physically fit and agile, classically trained actor rather than a gymnast, dancer, stunt person, or athlete if the end char-



Actor Andy Serkis in full motion capture regalia, and behind the CG mask of Gollum. Photos courtesy of New Line Cinema.

acter must interact with others and behave believably in complex gameplay situations. A gymnast or athlete may be a fine choice for a sports or arcade game but will probably not have a lot of knowledge about acting. A performer may be able to move beautifully but still deliver a weak performance. If you have a director who is also weak on acting theory or directing such a performer, you have a certain recipe for a wooden end result.

Shakespeare advised that actors should “Hold the mirror up to nature” (*Hamlet*, act 3, scene 2), and it was more than a superficial suggestion. Your player is hard-wired by nature to read subtle signals in other humans. That is why acting matters. If your game characters move in a stiff and unmotivated way, you will probably not receive any protesting e-mails about it because the players know it’s only a game; they cut you a lot of slack because they know you’re just spoofing. But if someone in the player’s own life moves that way, it would set off emotional alarms.

Human beings begin recognizing what kind of human movement rings true when still in the crib. By the time a person gets to be 13 years old, he or she already has a doctorate in human movement, even if he or she can’t conceptualize and explain it to you. It is primal and evolutionary; we learn from one another through a process of mimesis. We understand early on, for example, what tension in the body looks like and that it often precedes an outburst of some kind; we recognize that relaxation manifests itself as a feeling of weight, not lightness; and, we recognize that there are smiles that can be trusted (the muscles around the eyes contract) and smiles that perhaps cannot be trusted (they don’t contract).

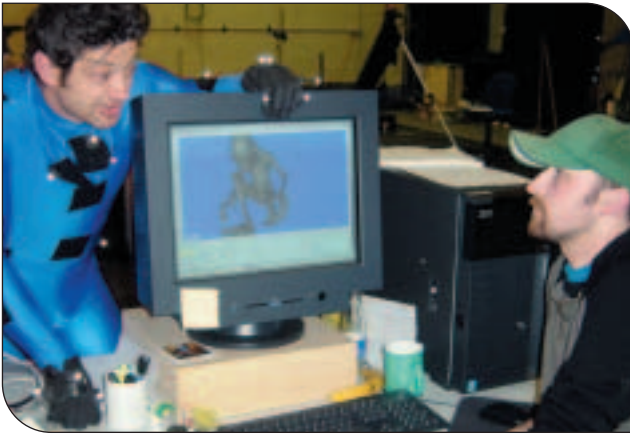
Dancers, gymnasts, and athletes do not typically move like normal people. They are trained to stand up straight and not slouch, for starters. If you pass such a person on the street, you recognize right away that he or she is different. An experienced

ballet dancer tends to walk by putting one foot directly in front of the other; an athlete or gymnast is going to be more loose-limbed than most of us. Depending on his or her sport, an athlete will likely have unusual upper body or lower body strength and musculature. Stunt performers move more normally but may not know much about acting. I have worked on TV shows with some stunt doubles who were actually pretty good actors, but most of them are more athlete than actor.

In a mocap session, the goal is often to capture hundreds of photo-real moves that will later fit together. From my perspective as an acting teacher, that is a technical limitation, not an end goal. I understand why you must do it and don’t envy you the task. But if you are looking for strong performance animation, movement cannot be separated from acting.

Here are some examples of how motivations and objectives affect movement in a performance, and why the director must keep them in mind to achieve optimal results. If you direct a mocap performer to “walk slowly from point A to point B and stop on the mark,” that is not actor-sensitive direction. The performer must have a reason for walking, a destination. If you don’t give him a contextual reason, he’ll do the move as you request, but the move will be hollow. A character will walk one way if she is moving across the room to take a lover into her arms and another way if she is moving to answer the phone. She will walk one way if she is moving across the room to meet her boss and another way if she is moving to greet a child. She will move one way if she is timid and another way if she is bold. She will walk across the room one way if she forgot to turn off the stove and another way if she has a rock in her shoe.

Certainly, a non-actor will understand simple contextual directions such as “Xenon is chasing you with a ray gun!” or “If you step on a land mine, you’re toast.” But a non-actor may well be weak on characterization itself. Your end charac-



Andy Serkis, who plays Gollum in the *Lord of the Rings* movie series, on the Weta Digital performance-capture stage in Wellington, New Zealand.

ter may or may not be intended to walk and run like the mocap performer you have hired. An actor can likely make the proper physical adjustments; a football player probably can't.

Another example: If a guy is feeling amorous and goes out on a date, he has an objective. He may put his arm around his date's shoulder and look longer into her eyes. In acting theory, these are actions in pursuit of an objective, a concept that is workaday for a trained actor but may be Greek to a gymnast. Actor Constantin Stanislavsky, father of "the method," defined acting as "playing an action in pursuit of an objective while overcoming an obstacle." If an actor knows why he is moving or carrying out a particular action and what the obstacle is, the capture will look more believable.

Even a straightforward war-themed game can improve by understanding this principle. A soldier at war wants to survive. That is his objective. He may have signed up for patriotic reasons but in the heat of battle, he simply wants to do the job and get out of there alive. The objective of survival and the obstacle is the situation. If this scenario is enunciated in mocap session, it will make the character movement edgier and more credible. All humans act to survive. We automatically recognize and respond to the survival strategies of others we meet in the world, including the characters in a game.

Thinking Leads to Conclusions; Emotion Leads to Action

Emotion may be defined as an automatic value response. When you feel an emotion (such as fear), you tend to do something about it — run, confront the danger, scream, reach for your gun, and so on. Each of your characters has his or her own set of values and resulting emotions.

We humans relate to one another largely through our emotions; captured movement should ideally also expose emotion. Many years ago at the Disney Studios in Hollywood, Disney's

drawing instructor, Don Graham, gave a famous lecture about the importance of animating force (impulse) rather than animating form (movement). In general, 3D leans heavily toward the animation of form, and mocap tilts even further in that direction. One of the biggest problems I see in games is that the character movement too often appears mental. A character decides to move from here to there rather than doing so in response to an emotion. One reason it can look like that is because mocap is capturing movement rather than acting.

Acting theorist Artonin Artaud famously pointed out that actors are "athletes of the heart." Movement that is motivated by thought instead of emotion will inform your players, but it will not move them emotionally.

Animation vs. Live Acting

That old saying about how "animators are actors" is not strictly correct. In preparation for this article, I went looking for current wisdom about mocap. I came across a man — no names, please — who evidently owns a mocap studio. He explained in his sales pitch how he often uses the animators at the client company as performers because they have a good understanding of the character and because "animators are actors, too!"

I've heard this "animators are actors" thing a thousand times, and I get the drift. I understand that an animator gets into the skin of the character and, in that sense, can be thought of as an actor. However, acting as perceived by the rest of the world is something that happens in the present moment.

Animation and live acting are two very different skills. If I kiss you on the cheek, you'll have an emotional response, pro or con. Actual actors have to deal with that reaction in the present moment. Animators don't have a present moment. They have to create the illusion of a present moment. The performers in your mocap session are acting in the present moment, but the animators that lay the last mile of the performance pipe are not. This is another reason why there is a natural tension between mocap and animators.

Scenes Begin in the Middle

Let's say a character enters from the left, crosses to the center of the room, glances this way and that, and exits on the right. Simple, right? You can direct that easily, right? Okay, let me ask you if you considered the following questions:

Where did the character come from when he entered? What happened before the sequence? Whatever happened prior to the sequence will dramatically affect the movement and dynamic of the sequence being captured.

When the character looks this way and that, will you have the actor actually see something, or will you have him pretend to be looking at something? Even if the character's face is not being captured, the body will move differently if your performer actually looks at something. Have him, for example, look at a shelf on



Trained actors approximate natural movement better than other physical performers.

the back wall of the studio to his left and then look at the bathroom door in the far right corner. Acting is doing. The more you can have the character actually do something rather than pretend to do it, the better it will look.

When the character exits, where is he going? You may not care because it is only necessary to get him out of the room, but in acting, the purpose of movement is destination. The character enters for a reason and exits for a reason. It is not simple movement.

You can extend this principle for sequences that involve multiple characters. Every single one of them has a “moment before” and a “moment after.” Every single one of them has a context and his or her own set of emotional responses.

Actions Act upon Actions

A character should play an action until something happens to make him play a different action. This principle is a close cousin of scenes beginning in the middle and is particularly important for your secondary characters. Remember in the

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early-generation games, when the player would enter a room and discover some character in there just rocking back and forth in a hold cycle? You can't get away with that kind of thing any longer. A character who is discovered in a room presumably was doing something before we arrived. Our arrival is what causes him to do something else. To capture the action of such a character, don't have him start from a static place. Come up with something he is already doing before the sequence begins.

Going back to the example of an amorous guy on a date, he may have roaming hands, but if she pushes him away, he's going to have to try another strategy if he wants to achieve his objective. He was playing an action until she did what she did. Then he played a different action.

Creating Atmosphere

A character moves differently in the cold than in heat. He may move differently at 2 a.m. than he will at 10 a.m. Each room or set has its own atmosphere that ideally will be taken into account by your director and mocap performer. A chapel, for example, has a different atmosphere from a party, and both of these have different atmospheres from a poker game or a jail cell. It is very easy to overlook this aspect of performance, but it can make a big difference to the resulting credibility.

The Point of No Return

Looking five or seven years down the road, there is no question that the most successful titles will feature characters with more human complexity and better-motivated movement. Oh sure, we'll still have games that are basically the equivalent of Mister Toad's Wild Ride. The situations in racers and football games and shoot 'em ups won't evolve all that much, and there will always be a market for them. But increasingly the players that prefer more situational games will expect more believable characters, and they will cut you less and less slack if you don't give it to them. Just as there is no going back to rubber hose animation in feature films, there is no going back to the first generation of character games.

Motion capture is here to stay, but right now the game industry is not using it to its full potential. The feature film crowd is doing better. True, feature film artists have an advantage over game artists; they can work on a single scene until utter perfection is achieved. Games need hundreds and thousands of variables depending on gameplay. The financial structure and development process between films and games is also different. But we're looking into the future, remember? Game companies are going to have to come to terms with the ever-higher expectations of players. Ten years from now we will look back on 2003 as quaint. We have already passed the point where whoever is in the office kitchen can put on the suit while somebody else in the office directs. Mocap sessions will increasingly require the skill of specialists that have a seat-of-the-pants understanding of acting principles and theory, plus the input and performance of strong actors. 