

Probing Question: Will digital actors replace humans in Hollywood?

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Is she live or is she CG? This 'person' was created without a model using a 3-D rendering and animation software program called Poser. Image credit Jim Nicholson

They look like real actors, they walk like real actors, they talk like real actors. But with these stars there are no contentious contract negotiations or on-set meltdowns. They do exactly what the director tells them, down to curling a lip just so or flaring a nostril to the perfect degree, no questions asked.

Who are they? Digital actors — movie characters created entirely via photo-realistic computer animation. They're appearing in Hollywood films with greater frequency, from "The Lord of the Rings" and "The Matrix" trilogies to children's fare such as "The Polar Express." But how

close are CG (computer graphics) actors to that dream vision, and will they ever replace human beings in Hollywood?

Not completely, said Kenneth Womack, noting that replacing Hollywood stars with digital counterparts would rob movie fans of one of their favorite pastimes -- celebrity gossip. "Identity politics and star-power have been central motifs in the film industry since its inception," explained Womack, professor of English at Penn State Altoona. Brad and Angelina hold audience attention with their personal lives as much as with their acting ability, and digital actors make poor tabloid fodder.

Ultimately, though, it's all a matter of money, said Womack. If audiences accept CG movie stars, and Hollywood can earn blockbuster cash without paying millions for a Will Smith or Tom Hanks, what's to stop them from doing so? "If the technology can do that, the powers that be in Hollywood would be on board from a financial perspective. It may sound cynical to express it this way," Womack said, "but in truth I have yet to come upon a decision in the film industry that isn't bound to the economic bottom line."

So far, digital actors haven't proven less expensive than their real-life counterparts, he noted. Behind every CG character is a team of dozens, if not hundreds, of people, each of them needing to be paid. Still, some Hollywood directors have embraced digital actors for artistic rather than economic reasons. George Lucas's "Star Wars" prequels gave us Jar Jar Binks, the first movie character created almost entirely on a computer. And Robert Zemeckis has directed two feature films, "The Polar Express" and "Beowulf," featuring life-like digitized versions of famous stars such as John Malkovich and Anthony Hopkins, using a CGI (computer-generated imagery) technique called motion capture, or "mocap," that records human movement and translates it onto a digital model. Those films, however, still cost vast sums to produce. ("The Polar Express" cost \$150 million, the same as recent animated films, "Bee

Movie" and "Ratatouille.")

Most important, audiences have been slow to accept CG characters. The first movie starring only digital actors, 2001's "Final Fantasy: The Spirits Within," was a box-office bomb, losing \$130 million. Last fall's "Beowulf" used much-improved technology, Womack noted, but many people still found something "off" about its stars: While the character onscreen looks like Angelina Jolie, in an unsettling way, it's clear she isn't Angelina Jolie. Experts have dubbed this problem "the uncanny valley." As simulated humans grow more realistic, viewers become more aware of — and disconcerted by — the subtle ways the characters don't seem human. Eyes — the windows to the soul — are especially difficult for digital animators to replicate convincingly. The current technology seems better at creating nonhuman characters, such as Gollum from "The Lord of the Rings" or the monsters of "I Am Legend."

That will change, Womack believes. If and when the technology arrives to create persuasively realistic human actors, Hollywood will embrace it. As he put it, "When CGI finally usurps the human frontier, Hollywood will undoubtedly experiment in that vein for as far and as long as the dollars will take them. That's entertainment — or at least the entertainment industry."

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