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Actors and Visual Effects: How to Behave on a Green Screen

In movies like 'Jurassic World' and 'Ted 2,' actors increasingly must work without other actors—or scenery

Jessica Barth and Ted in 'Ted 2' *PHOTO: UNIVERSAL PICTURES*

By **DON STEINBERG**

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In the first "Ted" movie, Tami-Lynn made out with Ted, the randy teddy bear, on a sofa. Filming the scene, actress Jessica Barth had to hug and smooch thin air. Seth MacFarlane, the writer, director and voice of Ted, called out directions.

"It was awkward," Ms. Barth says. "Where should my hands be? Does my mouth need to be open, do you want to see my tongue?"

"Ted 2," which opens June 26, demanded more. Tami-Lynn and the wisecracking Ted, now married, have arguments and emotional scenes together as they try to have a baby.

"There's nothing there when I'm acting opposite Ted," says Ms. Barth. "We can rehearse with a stuffed animal, or with an eye-line, which is a stick with two eyeballs on it. But when it comes time to film, they take that out, then there's nothing."

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It's one of the biggest changes in the acting profession since the advent of talkies. Actors must constantly summon dramatic performances while looking at scenery and co-stars that aren't there. Directors are routinely placing actors into simulated backgrounds (replacing green or blue screens on the set) and adding digitally animated characters into filmed scenes.

An entirely new vocabulary has arisen: "Monster sticks," "motion reference" and "consistent eye lines" are now common. Players often ply their thespian trade opposite tennis balls on a stick.

Giving convincing performances amid digital effects is essential to the success of the movie industry's biggest blockbusters like last weekend's "Jurassic World," the first film ever to sell more than $500 million in tickets in its opening weekend. Last summer's "Guardians of the Galaxy" grossed nearly $774 million world-wide.

While expensive visual effects are a big part of these films' global success, the stars still need to do their jobs. Pretending is what actors have always done, of course, and movies have always relied on fakery and illusion. But the sheer volume of the tricks these days is new.

Mike Chambers, chairman of the Visual Effects Society, estimates 95% of movies today employs some digital imagery. "It's not just the big comic book, action, science fiction, disaster movies. There's a lot of subtle things going on in a lot of movies," he says.

In "The Social Network," for instance, Armie Hammer appeared as both twins Cameron and Tyler Winklevoss. But during filming, another actor, Josh Pence, played a twin. Then they swapped roles and did the same scenes again. In postproduction, Mr.

Armie Hammer (Winklevoss twins) and Max Minghella in 'The Social Network' *PHOTO: COLUMBIA PICTURES*

Hammer's face was digitally copied onto Mr. Pence's body to make the twins look completely identical. Mark Wahlberg, when walking alongside an animated Ted that would be added later, had to take extra-small strides to maintain the pace that a stuffed little bear would have.

Actors on soundstages often perform in front of vast sheets of green screen (sometimes blue), pretending they're on the streets of 1920s New York, in Ancient Rome, or on another planet.

"They stand on a patch of dirt in the foreground and we put something in the background," says Peter Baustaedter, who has created background art for films including "Titanic" and "Avatar." The director can advise actors: "You're in this beautiful valley, or you're coming up to a Roman villa" Mr. Baustaedter says. After that, the actors are on their own: "Here's more green for you—hope that helps."

"You've just got to dig deep and really imagine it," says Jason Clarke, who stars in "Terminator Genisys," opening July 1. Playing John Connor in the film, Mr. Clarke has a change come over his body that he couldn't see while he was acting the scene. He had to ask visual effects people how pained he was supposed to look.

His character in last year's "Dawn of the Planet of the Apes" confronted an army of primates.

"I'm imagining 80 apes there," says Mr. Clarke. His strategy: "You have to go much stronger with your conviction. I find myself with the director saying, "Look, I'm gonna go big.'"

Arnold Schwarzenegger in 'Terminator Genisys' *PHOTO: PARAMOUNT PICTURES*

Some drama schools are adapting, adding green-screen training to the curriculum. "Actors need to be able to go onto a set and know exactly what to do. There's no time to teach them there," says Penny Templeton, who runs a studio in New York.

At a recent Monday night class, two actors sat on chairs on a bare stage, vivid green sheets hung behind them, reciting movie dialogue while piloting a spaceship through an asteroid field. Instructor Hank Schob, videotaping the exercise, yelled instructions like "zooming left!" and the students craned their necks, not always in sync, to watch imaginary objects fly by. "If you don't see it, the audience won't see it," he told the students. Later he would insert their performances into an asteroid-field animation using off-the-shelf PC software.

During TV and film shoots, filmmakers do what they can to guide actors. A visual-effects supervisor often is present on the set to consult and show "previsualizations"—cartoony video mock-ups of what a scene will look like. Software can display live actors on a screen with simplified computer visuals. That's a great tool for directors and cinematographers, but actors can't look at it while they're performing. In fact, for battles against CGI creatures, actors might be told: "In 18 months you'll see in a cinema what you were fighting against," says digital effects supervisor Christian Manz.

It can be especially tricky to get authentic reactions to computer imagery from child actors, Mr. Manz says. There's a scene in a movie he worked on, "Nanny McPhee Returns," where kids joyfully watch piglets swimming in a pond. The pigs weren't actually there, and at first the children couldn't convincingly fake amusement. "So Emma Thompson jumped into the pond fully clothed. The kids absolutely lit up," Mr. Manz says.

Getting crowds to react believably to invisible things is a challenge, too. In last year's "Dracula Untold," Vlad the Impaler unleashes a swarm of bats upon a Turkish army of

When the Green Screen Is Your Acting Partner »

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Jason Clarke, center, on the set of 'Dawn of the Planet of the Apes' in 2013. 20TH CENTURY

100,000, portrayed on set by 150 Northern Irish extras and a few stunt guys. Computer-rendering the bats wasn't a problem, but getting the soldiers to act like they were under bat attack was.

"Everybody was looking at different directions, and nobody really looked as if they were being eaten alive by these things." said Mr. Manz. Visual effects pros can adapt to imprecise acting by creating animations to match what is filmed. "We had one guy who ran across the whole shot, so we had a flock of bats chasing him."

The crucial element for actors staring at green screen or a co-star who isn't there is looking at the right place. A consistent "eye line" is especially important when multiple actors pretend to see the same object.

"It's really important that you're all in agreement. It can't be general agreement. It has to be exact," says Stephen Lang , former co-creative director of New York's Actors Studio, who played Colonel Quaritch in James Cameron's "Avatar." "When I'd be out on my dragon warship, everything's green. Debates would happen as to where this creature is. [Director] Jim Cameron would say 'it's up there.' And I'd look up and point my weapon. And he'd say, 'No, no, a foot to the right.'"

Stuffed animals, puppets, or little models called maquettes sometime stand in for characters that will be drawn in digitally later. Laser pointers or tennis balls attached to sticks can provide moving reference points on the set.

“For a creature that’s 10 feet tall, we’ll come up with a rig where somebody wears a backpack with a pole and a tennis ball on it 10 feet in the air, to help everybody look in the right place,” says Janek Sirrs, visual-effects supervisor on “Terminator Genisys.”

Sean Gunn on the set of ‘Guardians of the Galaxy’ *PHOTO: WALT DISNEY CO./EVERETT COLLECTION*

Human stand-ins serving as “motion reference” are becoming more common, creating a new kind of acting job. Bradley Cooper got the credit for portraying Rocket Raccoon in last year’s hit “Guardians of the Galaxy.” He did the voice—but it was Sean Gunn who performed as Rocket on the set, walking around on his knees. His job was different from “motion capture,” where a computer tracks body parts so animators can make a simulated character move realistically. It was “motion reference,” to give fellow actors a face to play off.

“I wanted to get my eyes where Rocket’s eyes were. So when the other actors were looking at Rocket’s face they were interacting with an actual face, not a tennis ball,” Mr. Gunn says. He was replaced by the animated raccoon in postproduction.

For scenes in “Jurassic World,” producers had dancers prance around wearing fiberglass raptor helmets, giving actors and camera operators a common eye-line. They, too, were replaced by computer-made beasts. The way the light hit the raptor headgear on the set guided digital artists in shading and lighting the computer replacements. The “Jurassic” set also included animatronic dinosaurs, tennis balls on rods, and monster sticks—creature heads mounted on poles. “We had a full-size cutout head of our

Indominus Rex. It was eight feet long and 4 feet tall," says Tim Alexander, visual-effects supervisor on the film.

Bryce Dallas Howard in 'Jurassic World' *PHOTO: UNIVERSAL PICTURES*

Says Bryce Dallas Howard, who co-stars in "Jurassic World" as a park manager: "Balancing the emotion you're trying to convey while making sure you're looking in the right direction as the dinosaur is charging at you—oh, and that dinosaur is actually a tennis ball—it can get tricky."

Still, Ms. Howard says, "acting with tennis balls instead of dinosaurs or dragons is really not that unusual if you come from a theater-school background. I've logged thousands of hours of rolling around the floor pretending to be 'regret,' or acting like I'm walking on the sun, or that I'm a ghost rising from my grave. There's always a thought in the back of your mind that 'this is weird.' But you have to learn to get over it, because basically, that's show business."

—Erich Schwartzel contributed to this article.

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