

## At This 'Tempest,' Digital Wizardry Makes 'Rough Magic'



Picture this: It's the first act of "The Tempest," and the shipwrecked conjurer Prospero is reminding the spirit Ariel of his miserable past — 12 years imprisoned by a witch inside a "cloven pine." Theatregoers see two costumed actors, as always, but also, rising high above them, a towering, gnarled tree, within which writhes a 17-foot avatar of Ariel, moaning in recollected agony.

An hour or so later, Ariel, carrying out a mission at Prospero's behest, morphs into a harpy — a ravenous monster with a woman's face and breasts and a vulture's talons and wings — soaring intangibly but menacingly above the stage in a pixelated projection that traces the movements and facial expressions of an actor at stage left.

Here, in the birthplace of Shakespeare, theatre artists and technologists are trying to reimagine stagecraft for the digital age. Experimenting with one of Shakespeare's greatest — and final — plays, the Royal Shakespeare Company, working with Intel and a London-based production company called the Imaginarium, has mounted a "Tempest" in which Ariel's physical transformations are made visible with what the collaborators say is the most elaborate use of motion capture ever attempted in live theatre.

"More than any other Shakespeare play, there's magic in 'The Tempest,' and I've desperately wanted there to be a sense of wonder in this play," said Mark Quartley, the actor playing Ariel. "It's thrilling to do it in live performance."

The motion-capture process, in which Mr. Quartley's movements are used to animate a digital creature, has been employed for years in film, most famously to inform the lifelike physical

movements of Gollum in the “Lord of the Rings” movies and for the title character in the 2005 remake of “King Kong.” But adapting the process for theatre has proved difficult, because live performance, by definition, happens in real time, meaning there is no opportunity for the postproduction editing that is generally used to perfect cinematic animation.

“We’ve always wanted to marry performance capture with the stage,” said Andy Serkis, the actor who worked as the body behind Gollum and Kong. Mr. Serkis became so enamoured of motion capture that he helped found Imaginarium, and he is serving as a creative consultant on this “Tempest” production. “But there are so many risks involved. There’s no room for error.”

Mr. Quartley speaks all the character’s lines and determines all of its motions, which, as a result, can vary from performance to performance. The avatar is deployed only when Ariel’s mind turns to magic: When he is having an emotionally fraught conversation with Prospero, that is played actor to actor, but when the talk turns to enchantment, the avatar appears. “When my agent told me they were doing a new production of ‘The Tempest’ with an avatar, my immediate concern was that I’d be sitting in a back room somewhere moving, and I wasn’t sure how fulfilling that would be as an actor,” Mr. Quartley said.

Reassured that he would be onstage — that’s one way the Royal Shakespeare Company signals to the audience that it is not watching pre-recorded video — he took the role, and now he relishes both the physical and technological challenge of making it work. At each performance, Mr. Quartley wears a skin-tight Lycra suit, with 16 motion sensors zipped into the costume and one embedded in his wig. They wirelessly transmit the coordinates of his body parts to computers that transform the data into the avatar projected onto screens moving over the stage. The costume must be recalibrated five or six times during each show, because if a sensor is out of place, as happens from time to time, the avatar can look contorted.

“It’s just breathtakingly beautiful,” said Simon Russell Beale, the great British actor, who played Ariel at the Royal Shakespeare Company in 1993 and who is Prospero in this production. Mr. Russell Beale’s Ariel is remembered for a low-tech spectacle — his was a cold and angry spirit, who spat on Prospero upon being set free at play’s end. Mr. Russell Beale said that given the magic coursing through this play, the use of technology makes sense. “As an intellectual argument, it’s pretty watertight,” he said. “I still believe the most important bit is the human interaction, but if that can be enhanced by technological means, then great.”

Gregory Doran, the artistic director at the Royal Shakespeare Company, is already thinking about how the technology can be applied to other plays. “Theatre has always embraced new technology — we go with any new idea, and we try to find out what it can do and what it can’t do,” Mr. Doran said. “It’s the words that excite you. The rest is just a way of letting people in.”