"I Am Legend": Making an Alternate Ending

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In this alternate ending of the motion picture "I Am Legend," the full CG-infected characters interact with our hero, played by Will Smith.

Probably the most significant animation challenge was the creation of the infected human characters. The characters' body were rigged for both animation and motion capture, and performances were a combination of both. In the shots where motion capture was used, supplemental animation was layered on top of the motion capture to produce the effect of metabolism going through the roof. Their pulse rate is up, their breathing heavy (in a state of near-hyperventilation) and muscles are tense and shaking. While muscles and tendons were rigged to replicate natural anatomical mechanics, animators also had discreet control over these elements so that bulging, quivering muscles and tendons in the neck (for example) could be articulated to show vocalization. Muscle rebound and fat jiggle were also animated by hand, since these effects are typically driven by external forces (like gravity) and behave differently throughout the body (and face) in terms of their mass and their attachment to the bone. Procedural solutions tend to produce an overall "rubbery" effect. Additional controls were used to drive pulsing and bulging veins as well as temple and artery pulsation. A sweat system was also developed that combined simulation and surface-based shader controls that were completely manipulatable by the artist.

Many of the infected human characters were hand-animated from the ground up. The goal was to produce performances that were more extreme and violent than what could practically be captured on set. They had to be stronger and faster than a human, yet completely believable and grounded in this physical world. It was up to the animation team to merge these two worlds in a believable and convincing way.

The faces were animated completely by hand. This was due in part to the short production schedule that precluded integration of motion capture data, but also because the character designs were being manipulated and refined well into the animation process. As a result, special-purpose facial controls were developed for (and by) animators to address performance needs on a shot-by-shot basis. It would have otherwise taken many months to develop an elegant rig versatile enough to handle the diverse range of expression required – especially for the subtle nuances.

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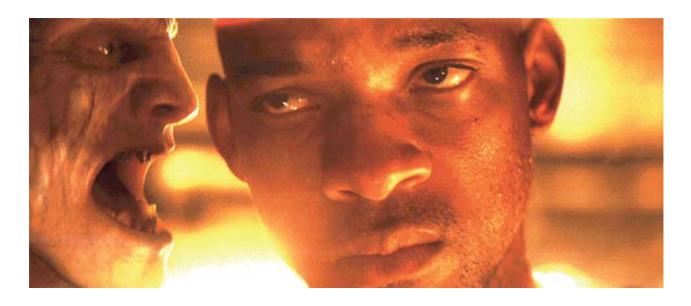Terrance Tornberg
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