



From Synthespian to Avatar: Re-framing the Digital Human in Final Fantasy and The Polar Express

By Jessica Aldred

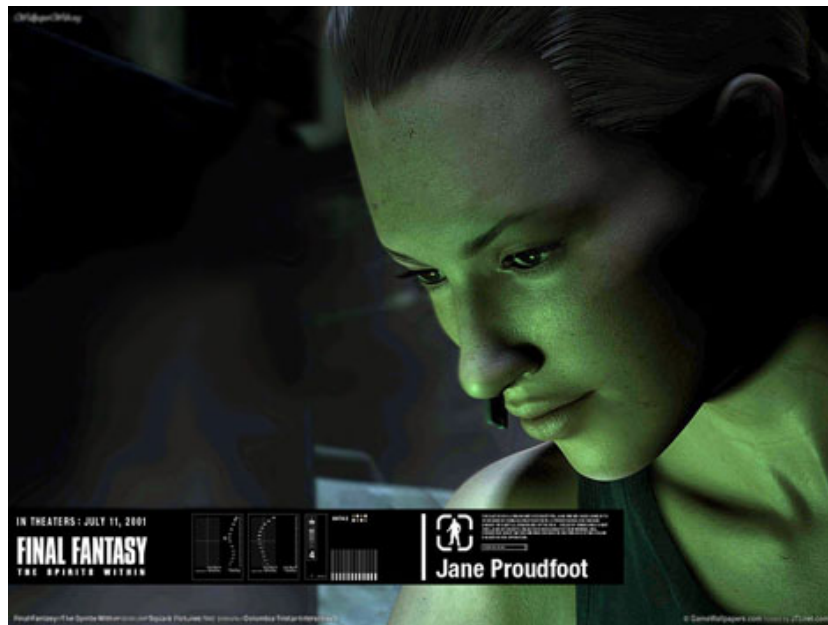
In the months leading up to the July 2001 release of Final Fantasy: The Spirits Within (dir. Hironobu Sakaguchi), nervous stars and journalists speculated that digital actors or “synthespians” could come to replace real, flesh-and-blood Hollywood talent. With star salaries on the rise and the threat of a Screen Actors Guild strike looming at the time of the film’s release, the computer-generated cast of Final Fantasy seemed to present an all-too-tempting alternative to conventional star performers. Alarmist headlines such as “Digital Actors Could Replace Hollywood Stars” and “Soon We Won’t Need Real Film Actors” announced the expected takeover. Meanwhile, the prospect of a Hollywood populated only by cyberstars was deemed unsettling at best: “I am very troubled by it,” fretted superstar Tom Hanks at the time. “But it’s coming down, man. It’s going to happen. And I’m not sure what actors can do about it.”¹ Flash forward just three years later, however, and a strange thing has happened to Tom Hanks. The two-time Oscar winner was once again at the forefront of the digital actor debate, but appeared to have switched teams: dressed in a black cap and jumpsuit, his face and body studded with hundreds of reflective dots, the recognisable image of Hanks now appeared alongside that of one of the digital characters he was playing in Robert Zemeckis’ computer-generated blockbuster The Polar Express.



Bodily positions and facial expressions near-identical but somewhat altered in external physical appearance, this odd couple was typically paired with an article in which Hanks and director Robert Zemeckis praised the utopian possibilities of “performance capture” technology: the updated form of motion capture in which computer-recorded data from reflective markers on the actor’s body and face allows their movements and expressions to “drive” those of a digital stand-in in the film’s CGI storyworld.

Apart from reporting Tom Hanks as the victim of some sort of digital body-snatching conspiracy, how might we understand this apparent shift in how “realistic” human characters have been constructed and received within the brief history of the computer-generated blockbuster? What is at stake when the perceived threat of the “synthespian” or autonomous digital actor designed to replace the human star gets re-imagined as a transformative digital character that purports to empower and extend the abilities of its human operator? And how might we problematize this discourse of a decisive break between these films and their (apparently) drastically different mode of digital human imaging? As we’ll see, for all that their attendant promotional materials and critical reviews posit the digital stars of Final Fantasy and Polar Express as belonging to different species entirely, these figures actually share certain production processes and present overlapping — if differently articulated — challenges to both their creators and their spectator/consumers. The name “synthespian,” later dropped in the literature surrounding The Polar Express, speaks volumes: photoreal but not real, lifelike but not living, the multiple material underpinnings of the Final Fantasy-era digital actor were suppressed in favour of highlighting how they were entirely constructed in virtual computer space. Infused with a not-so-latent millennial angst about digital imaging technologies and their potential for perfect simulation, the pre-Final Fantasy notion of the synthespian and the somewhat paranoid speculation it inspired wasn’t just limited to the mainstream media. Within academia, similar speculation centred on the figure of the “cyberstar” (to borrow Barbara Creed’s term) as a kind of autonomous, binary-code-built-replacement for the human star, rather than a means of extending their creative abilities.² Given Final Fantasy’s critical and commercial failure, which was in part blamed on the discomfiting creepiness

of its human characters, it is tempting to interpret The Polar Express' subsequent efforts to put the body back in picture as a rather straightforward attempt to re-instate a more traditional nexus of identification between "real" human star, character and spectator. At the very least, it appears a somewhat token attempt to ease what scholars and spectators alike have deemed one of the most troubling aspects of these characters — their uncanniness due to their liminal position between live action and animation, and their differing codes for visual appearance and physical movement.



However, digital actors are only the most recent "uncanny" players in a long history of uneasy reception when it comes to how new moving image technologies "animate" or "give life to" the human form. As Lisa Bode quite rightly asserts, our uncertainty about the animated human — digital or otherwise — is always historically contingent, and must be understood within a larger framework of what it means to be human within broader cultural and technological systems at the time.³ By examining the visual grammar and promotional materials of my chosen films, I will show that the relationship between the photographic, indexical image of the lived human body and that of the "drawn" or "rendered" image of the animated body is always in a state of flux, dependent upon the broader cultural and industrial circumstances in which they are produced and received. While Final Fantasy's (ultimately unsuccessful) discursive repression of the corporeal bodies within articulates broader anxieties over the fate of the human in the age of flawless digital simulation, The Polar Express strives to positively re-configure our perception of the union between the organic and the technological by invoking an increasingly dominant discourse of human mastery over the digital image — that of the gamer controlling her in-game character or avatar.⁴ However, for all that this shift suggests, a linear telos from rejection to acceptance of the digital human — in tandem with a larger shift from cultural anxiety in the face of newly pervasive digital technology towards a reception grounded in user literacy and agency — the reality has been decidedly more complicated. Like Final Fantasy before it, The Polar Express ultimately struggles to reconcile the excessive effects of its digital human characters; while in Final Fantasy, this struggle played out around the uncomfortable realism of its characters and their perceived threat to the indexical ontology of cinema. The Polar Express grapples with the spectacularity of digital media convergence, and the challenges of putting forth characters and spaces designed to be ported across media in a growing climate of transmedia consumption and connoisseurship. Ultimately, both films and their digital human occupants demonstrate how the boundaries between once distinct media forms have become irretrievably blurred in the digital age, creating new challenges for spectator/consumers in the process. In sharp contrast to the star focused promotional campaign that would later accompany The Polar Express, in the lead-up to its release, Final Fantasy's creators boasted of its uniqueness as a film that, according to its website, contained no real locations, people, vehicles or props.

Its designated breakout star Aki Ross was "not a person at all but a coolly rendered digital animation;"⁵ "made of nothing more than ones and zeroes;"⁶ built "in a computer in Waikiki Beach."⁷ Rather than foregrounding the actorly authorship of an iconic figure like Hanks, director Hironobu Sakaguchi and lead animator Roy Sato took turns positioning themselves as Aki's controller/operator; both men repeatedly joked in interviews about Aki's near-robotic obedience to their every artistic whim, especially in comparison to the unruly, self-governing troublemaker that is the human star. After all, it's highly unlikely that Gwyneth Paltrow would have agreed to a string bikini and an impromptu bust enlargement for a layout in Maxim's "Hot 100" issue, as Aki did in the April 2001, issue.



Actress Aki Ross does not exist, but her movie career is blossoming nevertheless. The computerized 27-year-old stars in the sci-fi adventure Final Fantasy: The Spirits Within, the first feature length film with an entire cast of nearly photorealistic animated humans. The technology could change the definition of "performer." "Unfortunately, actors are kind of bound to their own personal style, their own personal way of doing things," said Roy Sato, a senior animator on Final Fantasy. "Whereas with Aki, well ... I can make her do anything I want."⁸ Although once the kind of technician detail reserved for special interest FX publications, within the mainstream media there was a recurrent fixation upon the surface photorealism of Final Fantasy's characters — the time, money, and nerd sweat devoted to achieving "accurate" simulations of different surfaces and textures, ranging from fabric that wrinkled in relation to character movement, to skin that was believably "blemished," to hair that flowed convincingly, achievements that Sakaguchi and his team of animators credited to the proprietary computer hardware and software created for the film.



In many photo spreads, Aki had to strip down much further than her bikini, to the wireframe skeleton upon which her animators added different layers of muscle, skin and textural detail. For Vivian Sobchack, this media discourse of digital surface accuracy functions as a

kind of “epistemic call” to the spectator. We are asked to scrutinize the most minute details of Final Fantasy’s human characters with a “heightened and hyperbolic form of judgemental attention” in comparison to the “normal” mode of attention with which we might view cinematic realism or “irreal” animation.⁹ However, although Sobchack asserts that this “call to attention” is strictly extra-filmic, I would argue that this intensification of our gaze is further reinforced by the film’s mode of address. Prolonged, unflinching close-ups and isolated, fragmented shots of synthespian hands, foreheads, and faces invite the viewer to marvel at the latest innovations in texture mapping; eyes, hair, beads of sweat and liver spots have never merited so much screen time.¹⁰

As digital imaging became increasingly capable of simulating the tropes and aesthetics of live action cinematography, the digital human became the litmus test for whether digital animation could replicate every element of live action cinema, and, in so doing, presumably render it obsolete. Invoked repeatedly in relation to Final Fantasy, the term “photoreal” refers to its attempts to replicate the presumed photographic indexicality of cinema via non-photographic means, an endeavour Andrew Darley terms “second-order realism.”¹¹ Second-order realism reconsiders the ontology of the photographic image by severing the indexical connection to its original subject; simply put, it strives to replicate cinematic realism, but without any connection to the real-world referent. Thomas Lamarre argues that, in order to create a “new media world” of photoreal animation, Final Fantasy treats live-action cinema and its photo-indexical ontology as a stable, immutable world with origin and end — “old” media, which the “new” media of CGI must simulate and ultimately “kill” in order to come alive.¹² However, as Lamarre quite rightly asserts, just as new media cannot be tidily assumed to kill and subsume old media, ultimately Final Fantasy’s attempts at second-order realism do not detach it from questions of indexicality and real bodies entirely, no matter how strongly its creators attempt to suppress this connection.

In actual fact, just as Hanks’ characters in The Polar Express rely on “captured” human performance for their movements and expressions, Aki Ross and her co-stars rely on a multiplicity of human bodies, faces, and voices in order to be brought to life. Although the ostensibly Caucasian visual image of digital actor Aki Ross may be a computer-generated composite of texture maps digitally painted over wire-frame models, her voice was provided by Chinese actress Ming-Na, and the majority of her physical movements were animated by the motion captured performance of actress Tori Eldridge. Those of Eldridge’s movements which didn’t translate properly into animation and the bulk of Aki’s smaller gestures, as well as all of her facial expressions, were keyframed by her lead animator Roy Sato, who often modeled Aki’s expressions after a combination of Ming-Na’s expressions during her videotaped vocal recording, and his own facial expressions, as examined in a mirror he kept next to his computer.¹³

Far from being a purely synthetic synthespian, made of nothing more than ones and zeroes, Aki is actually a decidedly hybrid assemblage of human and technical interventions, one of which — motion capture — actually makes her a kind of precursor to the digital characters of The Polar Express, for all that her promotional materials would seek to suggest otherwise. In fact, by suppressing the multiple “real” bodies that “drive” Aki, Final Fantasy may have ensured they would come back to haunt her. Joanna Bouldin contends that by conjuring the co-presence of an absent, but real, body, motion capture is literally, “‘captured performance’ - the actual body, or at least its trace, held prisoner by the animated.”¹⁴ This “corporeal haunting” of the animated body by the original one produces an “incongruous, monstrous, cyborg body” that problematizes easy viewer identification, prompting an unsettling reflection upon the ambiguity of the animated body.¹⁵ For Mark Langer, the uncanniness of the motion-captured image stems precisely from its reference to the double of a filmed human actor, the co-presence of drawn image (mechanically or digitally recorded and animated, technologized, inorganic) and living body (organic, natural, “real”), forcing the viewer’s uncomfortable struggle to distinguish whether the body in question is actually alive.¹⁶

This struggle is evident in reviews of Final Fantasy, which grapple with the indeterminacy of these figures: “Too Real Yet Not Real Enough,” proclaims one headline, while another reviewer deems Aki “an eerie presence that is at once subtly unreal and yet convincing.”¹⁷ Cued by Final Fantasy’s promotional materials to wonder and worry about whether the real actor will be replaced by a digital simulation, and called upon to scrutinize these figures with a heightened, “hyperbolic” mode of perception, most spectators expressed their unease with Aki and her co-stars in terms of an uncertainty over how, exactly, these figures are being brought to life: Aki’s movements at times “feel about right” and at others possess “a mechanical quality;” she demonstrates “flickers of emotion” but has “a limited range of expression;” she does not so much digitally transcend the limitations of actual and animated bodies as she does embody them in multiple and unpredictable ways. The Polar Express also used a costly marketing campaign to highlight its complicated technical origins. However, The Polar Express sought to reframe the relationship between actual body and digital image as one wherein the body is neither erased nor held prisoner by the animated, but rather controls it from a separate space entirely. While still championing the creative potential of CGI, director Robert Zemeckis abandons the notion of second-order realism in relation to his characters. Instead, with Hanks’ help, he emphasizes how the star actor operates his digital screen characters through the interface of the hundreds of infrared light reflectors attached to his body and face, allowing Hanks’ movements and expressions to be recorded and seamlessly transmitted into the creation of his virtual stand-in.

However, while the publicity surrounding The Polar Express sought to uncouple the hybridity of character bodies as both real and animated, it doesn’t simply reinstate the uncomplicated dominance of both the human actor and live action cinema. Instead, it tends to foreground the virtual transformation of the former into the latter, with the real actor “controlling” the digital character’s actions in the film’s visually lavish, digital storyworld from a separate, neutral soundstage that Hanks and his co-stars repeatedly referred to as their

play space. Rather than being fragmented into multiple, brief takes, the performances recorded uncut and in real time, not unlike the real time of continuous game play. While conventional promotional build ups for star driven films tend to involve detailed celebrity interviews that stress the star's personal connection to the role in question, the only connection consistently highlighted between Hanks and the roles he plays in The Polar Express is a technical one: that of the interface that allows the "data" of his performance to be recorded and translated into the creation of a transformative character that can go anywhere and do anything. In this sense, Hanks' characters aren't dissimilar from James Newman's definition of video game characters as more defined by their functionality in the gameworld than their richly developed personas.¹⁸ Acting in this context is presented as much as technology assisted play as it is realistic character evocation, the interface that connects user/actor to his virtual avatar exposed and demystified in the hopes that it will be come invisible — virtual reality, without all the clunky gear. (Repeatedly, Hanks and his fellow actors assert that, after a few days of wearing the reflectors, they no longer noticed them.) Just as the gamer's actions drive the actions, reactions, and explorations of their on-screen avatar from the comfort of their living room via the interface of the game console and controller, Hanks' movements drive those of his virtual characters from the real world play space via the interface of the performance-capture sensors attached to his body.

Of course, Hanks doesn't actually get to explore the exhaustive digital storyworld of The Polar Express as his various avatars; that vicarious pleasure is left to the audience who find themselves hurtled and hurled through a variety of immersive, thrill-ride sequences while aligned with Hanks' characters. If the epistemic call of the film's promotional materials urges spectators to examine Hanks' digital characters for what they can do rather than how strictly photorealistic they look, the film's mode of address strives to extend this agency, or at least the bodily sensation of it, to the spectator. Released simultaneously as a conventional theatrical feature, a 3-D IMAX feature, and a Playstation 2 and PC game, the extra-textual emphasis on the lived actor driving the malleable digital image functions in conjunction with the film's highly-subjective, exploratory mode address to remediate the increasingly influential digital medium of the video game, seeking to address those spectators familiar with the visual grammar and modes of character construction found in such games. In so doing, it also none-too-subtly encourages cross-media consumption of the franchise's interactive incarnations.

While cinema may selectively construct its environments to serve a specific narrative trajectory, games must create what Alexander Galloway calls "actionable spaces" — complete, exhaustively detailed and navigable three-dimensional digital worlds within which the player controls the "camera" rather than the director, and (relatively) unrestricted gameplay occurs in real time.¹⁹ As Henry Jenkins and Kurt Squire assert, games tell stories through their organization of immersive "contested spaces," rewarding those players who learn to scan these detailed, dynamic spaces for any sort of competitive advantage.²⁰ Although The Polar Express lacks the interactive component that many have argued is crucial to the experience of presence within game space, it remediates certain immersive qualities of this actionable space, and points viewers towards the possibility of further exploration via the film's ancillary spin-offs. As its much circulated promotional materials attest, the film's computer generated environments were, in fact, completely constructed for the possibility of 360-degree exploration, which Zemeckis enacts both through his prolonged, subjective alignment with certain characters as they run, ski, jump and plummet through these elaborate spaces, as well as through those sweeping, objective perspectives that serve to give spectators vital clues about the environment and potential obstacles that may lie ahead. While the viewer may not actually be able to control the cinematic component of The Polar Express adventure, Zemeckis constructs the sense of a unified digital play space that would be delightful to explore further with a joystick in hand. If there is a hyperbolic mode of perception activated by The Polar Express, it was evident in the evasive ducking and weaving of those audience members of the 3-D Imax screening I attended.

Thus, while Final Fantasy renders Aki Ross' gestures and facial expressions spectacular through its intense diegetic and extra-textual scrutiny of its characters' photorealistic appearance and, by extension, the perceived threat they pose to live-action cinema, it is the game-like digital world of The Polar Express, and its characters' hyperkinetic navigation of that world, that is its true source of spectacle. Indeed, Variety went so far as to dub Zemeckis' film "The Bi-Polar Express" for its seemingly antithetical obligations to its source material, Chris Van Allsburg's sentimental children's book, and these recurrent, game-like "thrill ride" sequences. This immersive world largely subsumes Hanks' performance(s), prioritizing the expedient spatial exploration of Hanks' digital avatars over their photographic verisimilitude and realistic movement. For example, when Hanks' Hero Boy ventures out onto the roof of The Polar Express to return Hero Girl's ticket and ostensibly save her from being thrown off the train, a simple search and rescue mission becomes a deadline driven ski race — depicted primarily from a position of tight subjective alignment with Hero Boy — as the snow covered train hurtles up and down a series of increasingly treacherous hills and into a tunnel. Rather than watching Hanks' performance and evaluating its believability, or scrutinizing his close alignment with his characters during these immersive sequences encourages us to value their functionality instead — in this case, Hero Boy's ability to jump from train car to train car at precisely the right moment, for example, or dive into a coal car an instant before the train ducks into the tunnel. Even those scenes featuring the more presentational mode of address necessitated by the film's musical numbers emphasize how the "captured performances" of real actors are not held prisoner by the animated image in the manner that Final Fantasy's were, but rather are liberated from any lingering constraints of the corporeal body. This is evident, most notably, in the frenetic "Hot Chocolate" sequence, wherein Hanks' train conductor and a team of waiters dance, backflip and moonwalk their way through serving refreshments to a rapt audience of children.

As I've documented elsewhere, recent CGI-driven Hollywood blockbusters such as The Polar Express appear increasingly intent on foregrounding their "playful" capacities and game-like techniques.²¹ Prolonged subjective sequences that align viewers with the fluid, first-person explorations of a virtual camera have become a recurrent visual trope within everything from science fiction films like The Matrix, to children's fantasy fare such as Harry Potter and The Goblet of Fire or The Lord of the Rings, to the disaster film The Day After Tomorrow.

Such films also often feature episodic, multi- "level" narratives that alternate between exposition and intense, often subjective action sequences. In a risk averse Hollywood climate where fewer and more expensive films are made, the blockbuster film franchise increasingly favours readily extractable characters, easily serialized and "sequelized" narratives that translate easily to a global audience, and digitally rendered storyworlds in which one could just as easily insert a video game as a movie plot. As Angela Ndalians observes, the coalescence between cinema and video games exemplifies the broader condition of contemporary entertainment forms, wherein "media merge with media, genres unite to produce new hybrid forms, (and) narratives open up and extend into new spatial and serial configurations."²² The promotional materials for The Polar Express reinforce this new cinematic-gamic hybridity on an extratextual level by repeatedly stressing how performance capture liberates stars from the multiple limitations of the body, including their age, gender, ethnicity, and appearance.

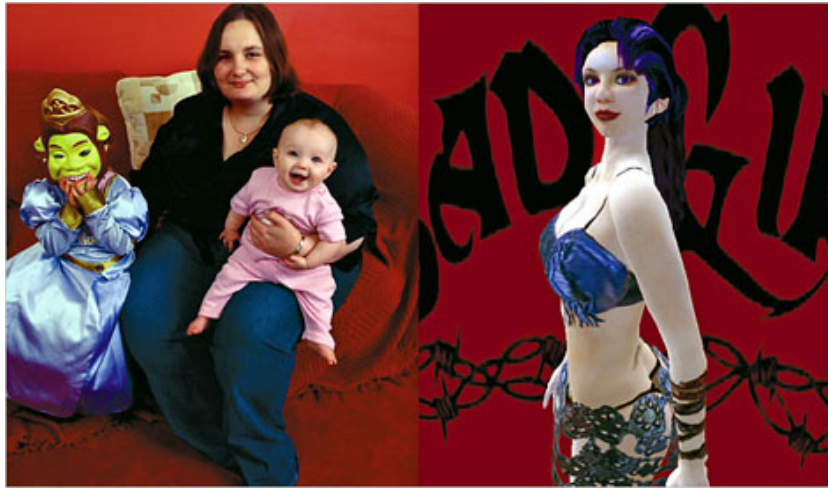
Hanks raved about the "freedom and the possibility" it granted him to play five, very different characters, ranging from an eight-year-old boy to Old Saint Nick: "You will no longer be limited by your size, shape, skin colour, age or gender. If you have the interpretation that the director wants for the role, then you can play any role. I could play Florence Nightingale, I could play Abraham Lincoln, and so could Meryl Streep."²³

This focus on escaping the restrictions of the body has been a recurrent theme within the literature surrounding virtuality and cyberspace — that in leaving the meat behind, we are free to experience varied and multiple subjectivities unavailable to our embodied selves. A distilled version of this discourse has since been adopted by and for video game enthusiasts. It's an especially common refrain amongst participants in MMORPGs (massively multiplayer online role-playing games) and persistent online virtual worlds like Second Life, who invest extensive amounts of time constructing what anthropologist Tom Boellstorff has termed "slider selves": digital stand-ins that can be tweaked and modified using in-game affordances to create the player's desired representation of him or herself in the world of the game, even if that avatar bears little resemblance to the operator-player controlling them.²⁴ To some extent, Hironobu Sakaguchi and Ray Sato mobilize a version of this discourse when they boast that they can make Aki Ross "do anything they want," and foreground the multiple digital protocols at their fingertips for modifying and customizing the finest details of her appearance and behaviour. Certainly Final Fantasy's origins in the role-playing computer game series of the same name, and the origins of its studio, Square Pictures, in game developer Square Enix, suggests the potential that Aki Ross could have functioned as the ideal prototype of what a "converged," cross-media character might look and behave like. However, not only does Final Fantasy's scrutinizing mode of address ensure that spectators evaluate Aki primarily for her perceived success or failure in replicating cinematic representation rather than her functionality and versatility within digital space; Aki's multiple operators — the many (suppressed) bodies that inform her creation — trouble the one-to-one mapping between user and avatar deemed crucial to their optimal functioning. Boellstorff observes an uncertainty created by Second Life avatars who have multiple users not unlike the uncertainty caused by the hybrid figure of Aki Ross — a woman who perplexes her husband's online community by inhabiting his musclebound avatar while he's at work, for example, causes similar unease regarding who, exactly, is bringing the digital human figure to life.²⁵

The importance of this isomorphic relationship between gamer and avatar is evident in Robbie Cooper's photo book Alter Egos: Avatars and Their Creators, wherein gamers are juxtaposed with images of their avatars in a fashion highly reminiscent of the images featuring Hanks alongside his various characters.



Like the promotional literature surrounding The Polar Express, Cooper's images and the text that accompanies them not only emphasize the diverse range of appearance modifications and super-human skills these individuals possess courtesy of their avatars, the incredible diversity of profile subjects contained therein also reinforces the growing ubiquity and persistence of the human-avatar relationship across boundaries of age, gender, and race. For example, there are currently an estimated thirty million dedicated MMO users around the world. Bode asserts that the uneasy contemporary reception of the digital actor is in part informed by broader cultural anxieties surrounding what it means to be human within the increasingly dominant conceptual framework of cybernetics, which, in N. Katherine Hayles' words, re-writes human bodies as "information processing devices receiving and transmitting signals to effect goal-directed behaviour."²⁶ Building on Marshall MacLuhan's theory of auto-amputation, Bode argues that our imbrication in these elaborate datascares can lead to a steady numbing of the nervous system, forcing us to retreat ever-inward while mobilizing computer technologies as a kind of compensatory prosthesis. However, by appropriating the language of empowerment that largely defines the current relationship between gamer and avatar, The Polar Express seeks to construct its digital human characters as extending and enhancing human agency, rather than enabling a shrinking retreat within the increasingly anesthetized human form. This language of empowerment pervades every profile that accompanies Cooper's pictures; asked about her experience during the six hours a week she gets to navigate Second Life as punk rock builder Jova Song, English housewife Charmaine Hance enthuses about the freedom it provides her to transcend the oft-constraining roles of wife and mother.²⁷



Meanwhile, for thirty four year-old Texan Jason Rowe, the eighty hours per week he spends as ranged weapons specialist and crack marksman Rurouni Kenshin in Star Wars Galaxies transform him from being wheelchair and respirator-bound to being able to "ride an Imperial speeder bike, fight monsters, or just hang out with friends at a bar... The computer screen is my window to the world."²⁸



They are, in other words, just as excited as Hanks about the transformations and abilities made accessible to them via their digital stand-ins. These personal stories find reinforcement in a recent study by Nick Yee and Jeremy Bailenson, which revealed that users who fashion more attractive and supremely abled "slider selves" benefit from what the authors have termed the Proteus Effect: consistently behaving more assertively in their online interactions with others thanks to the confidence boost from their enhanced self-representation.²⁹ Meanwhile, Boellstorff's study in Second Life indicated that this bolder and more assertive behaviour may actually spill back into the user's "real" life, helping them overcome the social constraints and particularities of their "actual" physicality. As Bob Rehak asserts, video game avatars function simultaneously as "self" and "other." Directed by their user's actions and yet freed by their difference from them, they are "supernatural ambassadors of agency" who allow players to explore aspects of their own materiality in fantasy form.³⁰ Contrary to some of the more alarmist conceptions of the dissolution of the human body in cyberspace and cybernetics, Rehak asserts that "we create avatars to leave our bodies behind, yet take the body with us in the form of codes and assumptions about what does and does not constitute a legitimate interface with reality — virtual or otherwise."³¹ There is little doubt or uncertainty within this gamer-avatar nexus as to who is bringing the digital character to life; the gamer not only "animates" the digital image through their actions, but does so after countless hours spent customizing the most minute details of their outward appearance, adjusting the head shape, facial structure, hair length, skin colour and sartorial choices of their double agent through a combination of in-game affordances and downloadable skins. The perceived uncanniness of the digital human — which has largely defined popular, technical, and scholarly writing on the subject — gets somewhat complicated in the gamer-avatar relationship. First coined by Japanese roboticist Masahiro Mori in 1970, the "uncanny valley" has become a widely-used trope to describe the phenomenon wherein, the more that digital human characters come to replicate human appearance, the more our perceptual apparatuses hone in on the tiny differences that render them "other" and strange.³²



As we've seen, this perception pervades the reception of [Final Fantasy](#). However, it's worth noting, however briefly, that Mori has subsequently amended his theory of the uncanny valley somewhat to acknowledge that video game avatars, particularly those which enable a high degree of user customization, are decidedly less likely to evoke an uncanny response in their operators than those human simulations that lack interactive control. It is within this framework of knowledgeable engagement with and manipulation of the digital character that the reception of [The Polar Express](#) and its characters must be situated. Critical responses to [The Polar Express](#) invoked a similarly uncanny vocabulary to that surrounding [Final Fantasy](#); its digital characters were similarly faulted for being eerie, zombie-like, and emotionally vacant. However, while [Final Fantasy](#)'s reception was marked by vague unease about character ontology and liveliness (or perceived lack thereof), [The Polar Express](#) and its characters were subject to an increasingly discerning and critical mode of CGI spectatorship that demanded to know what, exactly, had gone wrong and why — a mode of engagement that, as Henry Jenkins has thoroughly documented, increasingly defines digital media consumption in the age of media convergence.³³ Debates abounded in the blogosphere between animators and technology writers about the perceived problem of the uncanny valley; some animators and CGI enthusiasts put forth prospective solutions, while others argued for its insurmountability. One enterprising animator, Ward Jenkins, even took it upon himself to correct some of the perceived flaws in character facial expressions by re-working several film stills in Photoshop, an endeavour that directed an unprecedented amount of traffic to his blog and prompted a lively debate about human character animation that continued for several years thereafter.³⁴





The "before" and "after" juxtapositions are indeed striking, with several minor adjustments of eyebrows, eyes and mouths making a world of difference to the characters' expressiveness. These knowledgeable responses to, and even skilled interventions upon, the figure of the digital human suggest a possible future in which these figures may not seem so strange after all, a future wherein the literacy and agency of digital media users, cultivated in everything from their skilled creation and manipulation of "slider selves" within video games to their facility with home animation software, defines consumer/spectator engagement with the digital human. Certainly the ongoing reception of the digital human must be understood as a necessarily moving target, informed both by the viewer's broader understanding of its means of production, as well as his/her own constantly evolving relationship to new digital technologies. But as my chosen films have demonstrated, the figure of the digital human doesn't just articulate broader anxieties over what it means to be human in an age of flawless computational simulation; these figures are, perhaps most problematically, exemplary of the blurring boundaries between once distinct media forms in the digital age, and a crucial case study in how spectators must navigate between these increasingly converged forms. The shifting presentation and reception of these figures demonstrate how live-action cinema, animation, and video games increasingly influence and remediate one another in terms of character construction, mode of address, and promotional strategies. At the same time, the digital human points up the various ways in which this convergence is not so seamless as the most idealistic industry and academic discourse might suggest.

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NOTES

1. Dougherty, Hugh. "'Digital Actors Could Replace Hollywood Stars,' says Hanks." [Press Association News](#). 8 July 2001.
2. For example, Barbara Creed mobilized a Lacanian psychoanalytic framework to call into question whether viewers could achieve identification with a figure who hadn't undergone the offscreen trials and tribulations of lived experience, and as such, lacked an unconscious. Mary Flanagan, meanwhile, explored the hopeful possibilities for a cinematic cyberstar freed from any tangible obligation to an age, appearance, and gender-marked body and subjectivity. Although, in looking to the heavily stereotyped examples provided by female video game characters and the cyberstars of Japanese pop culture, she ultimately found very little to get excited about. See: Creed, Barbara. "The Cyberstar: Digital pleasure and the end of the unconscious." [Screen](#) 41.1 (2000): 79-85; Flanagan, Mary. "Mobile Identities, Digital Stars, and Post-Cinematic Selves." [Wide Angle](#) 21.1 (1999): 77-93.
3. Bode, Lisa. "From Shadow Citizens to Teflon Stars: Reception of the Transfiguring Effects of New Moving Image Technologies." [Animation: An Interdisciplinary Journal](#) 1.2 (2006): 179.
4. A Sanskrit word referring to the visible forms Hindu gods adopted to represent themselves in the mortal world, the term "avatar" has since been adopted by online and gamer culture to refer to the digital forms —some human, some fantastical — that represent us in virtual worlds. As Tom Boellstorff observes, while the term avatar "historically referred to incarnation — a movement from virtual to actual — with respect to online worlds it connotes the opposite movement from actual to virtual, a decarnation or invirtualization." Boellstorff, Tom. [Coming of Age in Second Life: An Anthropologist Explores the Virtually Human](#). Princeton, NJ: Princeton University Press, 2008. 128.
5. O'Sullivan, Michael. "Final Fantasy: Too Real and Yet Not Real Enough." [The Washington Post](#). 13 July 2001: T36.
6. Willonsky, Robert. "Flesh for Fantasy." [The Dallas Observer](#). 12 July 2001.

7. McCarthy, Todd. "Final Fantasy: The Spirits Within." Daily Variety. 9 July 2001.
8. Breznican, Anthony. "Final Fantasy is big break for digital actors." The Associated Press. 10 July 2001.
9. Sobchack, Vivian. "Final Fantasies: Computer Graphic Animation and the (Dis) Illusion of Life." Animated Worlds. Ed. S. Buchan. Bloomington: Indiana University Press, 2006. 179-180.
10. Sakaguchi's near-obsessive focus on the quality and accuracy of the spectacle on offer brings to mind the presentational mode of address Michele Pierson identifies within certain sci-fi films from the early-to- mid-90s "wonder years" of CGI, designed to encourage the kind of scrutinizing, technological gaze Pierson identifies with an emergent community of digital effects connoisseurship at the time. However, in contrast to the electronic, hyperreal "technofuturist" aesthetic Pierson identifies as dominating this period of CGI-driven sci-fi cinema — most famously embodied in the liquid-metal morphing spectacularity of the T-1000 in Terminator 2: Judgment Day (dir. James Cameron, 1991) — Sakaguchi's wholly-CGI feature favours a hyperbolic focus on simulationist photorealism. See: Pierson, Michele. Special Effects: Still in Search of Wonder. New York: Columbia University Press, 2002.
11. Darley, Andrew. Visual Digital Culture: Surface Play and Spectacle in New Media Genres. London: Routledge, 2000. 84.
12. Lamarre points out similar rhetorical efforts within new media scholarship at the time, most notably in Lev Manovich's The Language of New Media, which touted digital animation's achievement of second-order realism as a sign that animation, long subordinate to cinema, now subsumes cinema as one of many available graphic modes. See: Lamarre, Thomas. "New Media Worlds." Animated Worlds. Ed. S. Buchan. Bloomington: Indiana University Press, 2006. 131-150.
13. The keyframing process animates a scene by manually changing the position of the subject frame by frame.
14. Bouldin, Joanna. "Cadaver of the Real: Animation, Rotoscoping and the Politics of the Body." Animation Journal. 2004. 12-13.
15. Ibid. 13-15.
16. Langer, Mark. "The Rotoscope, The Double, and the Uncanny." Unpublished paper. Society for Animation Studies Conference, 2003.
17. See Willonsky 2001; Stephanie Zacharek. "Final Fantasy: The Spirits Within." Salon. 13 July 2001.
18. Newman, James. Videogames. London: Routledge, 2004. 134.
19. Galloway, Alexander. Gaming: Essays On Algorithmic Culture. Minneapolis: University of Minnesota Press, 2006. 64.
20. Jenkins, Henry and Kurt Squire. "The Art of Contested Spaces." Game On: The History and Culture of Video Games. Ed. L. King. New York: Universe, 2002. 65.
21. Aldred, Jessica. "All Aboard The Polar Express: A 'Playful' Change of Address in the Computer-Generated Blockbuster." Animation: An Interdisciplinary Journal. 1.2 (2006): 153-172.
22. Ndalianis, Angela. Neo-Baroque Aesthetics and Contemporary Entertainment. Cambridge (MA) and London: MIT Press, 2004. 2-3.
23. Anwar, Brett. "Tom Hanks: The Polar Express." BBC Movies. December 2004. .
24. Boellstorff, 129.
25. Boellstorff, 131-132.
26. Hayles in Bode, 183.
27. Cooper, Robbie. Alter Egos: Avatars and Their Creators. London: Boot Ltd, 2007.
28. Ibid.
29. Yee, Nick and Jeremy Bailenson. "The Proteus Effect: The Effect of Transformed Self-Representation on Behavior." Human Communication Research. Vol. 33 (2007): 271-290.
30. Rehak, Bob. "Playing at Being: Psychoanalysis and the Avatar." The Video Game Theory Reader. Eds M.J.P. Wolf and B. Perron. London: Routledge, 2003. 105-106.
31. Ibid. 123.
32. Mori observed that as robots come to look more human, they seem more familiar (and thus, more pleasing) to their observers, until a point of familiarity is reached at which even the most subtle deviations from human norms produce a discomfiting reaction in their human observer. He termed this dip in familiarity and corresponding surge in strangeness the uncanny valley. "Climbing a mountain is an example of a function that does not increase continuously: a person's altitude y does not always increase as the distance from the summit decreases owing to the intervening hills and valleys. I have noticed that, as robots appear more humanlike, our sense of their familiarity increases until we come to a valley. I call this relation the 'uncanny valley.'" See: Mori, Masahiro. "The Uncanny Valley." Trans. MacDorman, Karl F. and Takashi Minato. Energy. 7:4 (1970): 33-35.
33. See, for example, Henry Jenkins. Convergence Culture: Where Old and New Media Collide. New York and London: New York University Press, 2006.
34. Jenkins, Ward. "The Polar Express: A Virtual Train Wreck (conclusion)." The Ward-o-Matic: Art Animation & Anything Aesthetically Pleasing to the Eye. 18 December 2004. 17 October 2010. .

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