Diectic Feet: performance as the index of animation

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Physical moving about has the itinerant function
of yesterday's or today's "superstitions".
Michel de Certeau, *Walking in the City*[1]

Moving into the 21st Century, acting practice continues to be framed by an ever growing repertoire of recording technologies. The proliferation of archival technologies into everyday life, with digital cell phones for example, coupled with the flexibility of projection and display of digitally recorded images on theatrical stages, inflects the performing body, scripts its movements, marks its steps. With this essay I trace some of the paradigmatic shifts in how we think, use, and deploy performance in response to the proliferation of archival technologies which surround and inform the live and mediated movements of the contemporary actor. In order to approach how we think, use, and deploy performance in the digital era I propose an interrogation of cinematic motion-capture, animation, as well as the human steps themselves that such techniques seek to record and represent as performance. Instead of isolating performance as somehow only and or especially of the ephemeral and living, I propose an examination of its imbrication with recording and animation technologies as we pursue 21st Century performance.

1. *Steps*

The final image of Peter Jackson's second installment of *The Lord of the Rings*, *The Two Towers* (2002), concentrates the epic narrative tapestries of Tolkien's moral fantasy into one haunting, animate painting; an ashen landscape circled by winged dragons, dark under sooty clouds that lift from an explosive volcano rising alongside an equally threatening tower of industry, all framed by the sculpted crags of perilous mountains. Orange lightning flashes from the close right and echoes off to the fading horizon, pulling attention to the center of the image: the volcano and the tower, nature and the man-made, side by side in ecological destruction. The tower belongs to the mostly invisible villain, a vaporous being masked behind human technology: a ring, armor, cities, armies, and, atop his tower, a singular eye, bathed

[1] Michel de Certeau, *The Practice of Everyday Life*, 1st ed., University of California Press, Berkeley 2002, p. 106.

in flame, keeping careful watch, a fiery panopticon. The final image is destructive nature (volcano) and destructive mankind (tower) together, acting in violent harmony, threatening doom before the return to order and the free reign of nature in the final installment of the franchise: *The Return of the King* (2003). This image makes you come back to the theater and pay to see the conclusion. This image prepares the franchise to be crowned with eleven golden Oscars. The animate parts of the image (dragons, clouds, volcano fire and spume) read as digitally constructed yet the framing mountains work hard to stand out as beautifully sculpted miniatures. The two textures emerge as two towering image media, the digital and the photographic working in harmony to win box office and critical accolades.

Over this composite image echo the final words, uttered ominously by a cartoon, «Follow me». The animate creature Gollum, generated through the process of motion-capture, calls out to two pro-filmic actors, the film's protagonist duo, Samwise and Frodo, Sean Astin and Elijah Wood. The final image is directly linked to this performative hail, as the camera rises off of Gollum's words, up through real trees, merging a pro-filmic forest with a miniature mountainside, before settling on the goal, the tower and volcano... «follow me». Gollum plans to guide them to their goal, the volcano Mount Doom, but, secretly, he plans their own doom. Nevertheless, they follow. The image fades and the film ends. Credits roll as former spectators walk out. Already awaiting the final installment, I walk out of the theater only to see everyone following after cartoons of their own. I see a lot of people walking about while looking at animation; whether on phones or touch pads, playing games or music, texting or reading off animate screens, people walk with cartoons. There are also many people sitting before screens, consuming animation, but what I see more now is our walking about while (par)taking in animation. No longer solely the domain of kids clutching palm-sized game consoles, carted along errands, dragging feet blindly behind guardians, heads bowed in mobile fantasy; now grown and, as is to be expected, doing the same – trailing their own animations. I see all age groups walking around with animations in hand, on feet, holding cartoons, watching, playing; phones framing Roger Rabbit, hand in hand, side by side, animating our walks. In one way this pedestrian status quo articulates why, according to Samuel Weber, as digital life continues to spread across our social and physical spheres, «Theatrical practices, attitudes, even organizations seem to proliferate, in conjunction with if not in response to the new media».[2] Ever expanding towards touch, the digital employs performance to test cultural forces of embodiment, and walking *with* animation demonstrates a virtual world that does not erase the body, but instead, like theater, stages human steps that chase after prompts. Bipedal movement is a defining characteristic of the human form in action and as a practice

[2] Samuel Weber, *Theatricality as Medium*, 4th ed., Fordham University Press, New York 2004, p. 1.

it is a good contender for the evolutionary trend that freed up our hands to generate new technologies and ways of grasping the world, all of which, arguably, led to the expansion of the homo-sapiens brain and mind. Now, more than ever, we write or dial or play or read animations as we step out and move from outlet to outlet (electrical outlets, electronic stores, and general out-lets). Even if the walking world is not the dominant virtual performance space and the office and cubicle remain the domains of both virtual and laminate desktops, the emergence of animation in mobile telecommunications as well as the ever shrinking interface of digitalia points to a change between the pointing, touching, tracing digit on the one hand and the stride and print of toes on the foot.

This essay layers Weber's finding in *Theatricality as Medium* – his assertion of the growing importance of theatricality and performance in tandem with digitalia – with critical theories of film spectatorship as cinema grapples with its own digital transformation in order to explore 21st Century performance on its feet. Through investigating promotional campaigns (TV spots, interviews, books, making of featurettes, what Jonathan Gray calls «paratexts») launched by Hollywood to generate a sense of believability, identification, and connection between audiences and animate characters, this essay interrogates the ways theatricality is summoned to lend a sense of reality to the cartoon, where performance becomes the indexical site of contact with reality as film analysis moves beyond semiotics into studies of affect. I interrogate the concept, technology, and branding of motion-capture through aesthetic and theoretical instances of the step and walking, footprints and strides, and entrances and exits, to reveal a theatrical historiography both rooted and reborn in a digital animation practice. Beyond the specifics of motion capture, I will touch upon works of art that focus upon a foot impressing a print between present and past sign, offering pedantic touch as the theatrical promise of presence. A final touchstone will be the aesthetic celebrity of psychoanalytic theory and surrealist art, Gradiva. A bas-relief carved out of stone, the figure of a Roman woman stepping down, her heel high and her toes dipped to the floor; the name Gradiva means «the girl splendid in walking».[3]

2. *Motion-Capture*

In 2006 the actor attributed with performing the motion-capture avatar of Gollum, Andy Serkis, was honored by the German EDIT9 Film Festival with recognition for his advancements in film-making, particularly involving technologies of motion-capture. This honor has primarily been bestowed upon innovative

[3] Sigmund Freud, Wilhelm Jensen, *Delusion and Dream: An Interpretation in the Light of Psychoanalysis of Gradiva, a Novel, by Wilhelm Jensen, Which Is Here Translated*, trans. Helen M. Downey, Nabu Press, 2010, p. 150.

directors, special effects artists, and inventors of film technology. Serkis' recognition marks the first time an actor has joined the innovative ranks of Kubrick, Greenaway, and Harryhausen by doing what he has always done, performing. In addition to performance, Serkis' innovations include working in perfect concert with a giant orchestration of laboring bodies and technologies that employ digital motion-capture techniques in order to re-map captured performances onto animate bodies. Although an encompassing term, "motion-capture" today has come to signify a particular set of technologies and practices that combine animation and performance aided by a computer. Motion-capture can use a variety of different inputs, alternate ways of reading and capturing motion; from tracing field polarity moving through a magnetized studio to the image based capture of dots placed on a performer within a green screen or blank studio space. In *Closer,* Susan Kozel breaks the complex process of motion-capture into three distinct parts: the first being the tracing of movement (digital motion-capture), the second is the application of captured movement to an avatar or parts awaiting animation (digital animation), and third, the application of computer time to couple the trace of motion capture with the animate parts (rendering).[4] Combined, this multi-layered process assumes the mantle (once donned by photography) of motion-capture. The body that stands in for, indeed, stands *as* this complex process is the performer Andy Serkis, who has made a career out of animating this brand of motion-capture. The summation of Serkis' award by the festival committee reads: «Andy Serkis has utilized his years of experience as a theater trained actor to provide the human character blueprint for the visual effects artists to bring to life… Andy has clearly demonstrated how the mixture of humanity and technology can truly create incredible and believable characters».[5] Through the dual acts of pulling on a body sock covered in tiny dots over his five foot eight inch frame that assists in the computer capture of his movement and through the employment of his «years of experience as a theater trained actor», Serkis is heralded as inserting humanity into the mathematical abstraction that is digital animation. He is the «human character blueprint», the translation of humanity for the digital world; in essence, Serkis is recognized as the index of humanity, less a star than a proto-star. And his fame, his status as proto-star, came off stage from years of theater training to insert a human into a machine. In addition to being heralded as the human character blueprint, Serkis has been cast in many animation-based roles in feature films, from Gollum in Peter Jackson's *The Lord of the Rings* Trilogy (2001-2003) to primate stars in *King Kong* (Jackson, 2005) and *Rise of the Planet of the Apes* (directed by Rupert

[4] Susan Kozel, *Closer: Performance, Technologies, Phenomenology*, The MIT Press, Cambridge 2008, p. 220.
[5] eDIT9, Edit-frankfurt.de, http://www.edit-frankfurt.de/edit06/en/index.htm, accessed October 29, 2011.

Wyatt, 2011). He is paraded in front of cameras whenever motion capture or digital Hollywood is mentioned; consulted on whether or not computer generated actors need a special award category; has his own autobiographical book – *Gollum: How We Made Movie Magic;* all because of theater training and his deployment of that training onto motion capture technologies.[6]

Serkis's background accompanies an ontological quality of the digital, which seeks to foreground a procedural historicity linked to the laboring body. As media theorist Mark Hansen points to in his *Seeing with the Body*, «We might do better to describe digital photography as "synthetic", since digitization has the potential to redefine what photography is, both by displacing the centrality accorded the *status* of the photographic *image* (i.e., analog or digital) and by foregrounding the procedures by which the image is produced».[7] The digital foregrounds the procedures that go into the making of the image. The digital calls out the cultural, organizational, and technological performances behind the avatar and highlights them as apart of its media. The procedure that Serkis enacts is called "motion-capture" but this term fails to describe the totality of the process, as Kozel points out, «Motion capture is an unfortunate term because it implies that the motion is contained once it is captured, like a bee in a net, but this sophisticated and poetic slice of human-computer interaction is about flow, patterns, and shapes of movement, about the way life can be breathed into that which seemed inanimate».[8] The more one hears about motion-capture the more it appears as a way life steps into the inanimate.

Motion-capture may only be one way that life affects inanimate material but with it emphasizes the journey, the process, as if it is a style of performance and mode of living all its own. By its use of digital image making, motion-capture technology foregrounds its process, always revealing or indicating a procedure. But motion-capture delivers little else beyond this foregrounding of technological and human process. In fact, motion-capture neither cuts down on labor time nor reduces costs in feature animation practice and, as Rob Henderson, an animator at Dreamworks Studios points out, motion-capture is «often only used to generate believable crowd movement».[9] These positions assume that in addition to the motion-capture process, the *campaign* of Serkis' performance (located in promotional and featurette paratexts) is also necessary to bring animation into pro-filmic scenes without generating a comic or uncanny response in the spectator, a serious concern for filmmakers working at the cutting edge of digital effects and virtual bodies.

[6] Andy Serkis, *Gollum: A Behind the Scenes Guide of the Making of Gollum*, Mariner Books, New York 2003.
[7] Mark B. N. Hansen, *Seeing With The Body: The Digital Image in Postphotography*, «Diacritics», 31, 4 (Winter 2001), p. 57.
[8] S. Kozel, *Op. cit.*
[9] Ron Henderson, *Physics in Animation*, presented at the ICERM, Providence, November 15, 2012.

Notice how in this promotional interview on television's Discovery Channel, for the blockbuster *Avatar* (2009), filmmaker James Cameron emphasizes the importance of motion-capture to generating a digital character within a photographic image:

> we don't have to necessarily believe that it's 100 percent photo-real, and we don't have to necessarily believe that they actually exist, but we do have to believe in them as emotional creatures, and so we came up with the... um... the head rig... there is a carbon fiber boom that comes out with a little camera on the front of it, and that camera shoots the face in a nulled out close-up. So, even though the actor is moving all around... we're getting that facial performance, absolutely locked off. [...] And that proved to exactly be the sorta holy grail approach to how to do CG faces. [...] We got the best animators in the world, to take all this data coming out of our performance captures, and then we limited their options to things that were valued added: like the ears and the tails. So they took a human performance, with no diminishment whatsoever, and then added to it. So when people ask me, what percentage of the actor's performance came through in the final character I say 110% because you actually had an increase in whatever the emotionality of the moment was.[10]

The reality of the image is less important than the details of human performance that we are accustomed to with pro-filmic cinema. For film-makers of digitally animate worlds, motion-capture is not only the technical tool and process but the «holy grail» by which cartoon characters take on the blueprint of humanity. Cameron focuses in on the facial performance, but this emphasis follows after the action, where the actor is «moving all around». Like Jackson's composite image at the end of *The Two Towers*, Cameron uses this interview spot to re-enforce the composite nature of motion-capture, by foregrounding its procedures in performance.

3. *Celebrity*

Certainly, building celebrity or purchase power around the actor behind the cartoon generates a connection between spectator and the animate body onscreen. Even beyond the icon of recognition, character animation has long depended upon celebrities stepping into performance to model animate liveliness. On a tour of the Disney studios and animation process, a backstage promotional tour, the Russian film-maker Sergei Eisenstein witnessed Walt's own transformation into his star mouse: «Disney himself acts out the "part" or "role" of Mickey for this or that film. A dozen or so artists stand around him in a circle, quickly capturing the hilarious expressions of their posing and performing boss. And the extremely

[10] Jorge Ribas, *Avatar: Motion Capture Mirrors Emotions*, http://www.youtube.com/watch?v=1wK1Ixr-UmM, accessed April 28, 2011.

lively and lifelike preparations for the cartoon are ready – infectious through the whole hyperbolization of the drawing only because taken from a living person».[11] Attached to celebrity is the idea of embodiment, a proper name attached to a body in space, somewhere fixed to a name that endures. In addition to Mickey, the name that endures is that of the performing boss, Disney. Indeed, as Joseph Roach has argued about power and entertainment celebrity, «Celebrities, then, like kings, have two bodies, the body natural which decays and dies, and the body cinematic, which does neither».[12] Disney is famously frozen, awaiting re-animation. But even in this state, time still moves on, and, like the cinematic body, decays slowly on the shelves of archives. If the cinematic body is not quite immortal it decays, at any rate, apart from the time of the human body.

In any duration of decay, the dual body of the celebrity marks out space both inside and outside of their medium. In *Walking in the City*, Michel de Certeau has found that proper names link signifying practices with spatial ones, such as in the case with filmmaking, where, for instance, the name Disney opens the screen onto animate worlds. De Certeau finds within the kernels of a proper name «three distinct (but connected) functions of the relations between spatial and signifying practices are indicated (and perhaps founded): the *believable*, the *memorable* and the *primitive*. They designate what "authorizes" (or makes possible or credible) spatial appropriations».[13] One could think of Disneyland as aspiring to all three: the believable three-dimensional recreation of a magical (screened) world, the memorable experience of rides and immersion, and the primitive joy of childhood celebrated on every beautifully fake street corner. The proper name of a performer also makes the space of a character believable, replete with memorable touches of human contingency, and an essence of an underlying primitive human origin. This primitive quality associates beyond the character of Gollum to the promotional campaign surrounding Serkis and his blueprint performance. Serkis was not a "star" in Hollywood before his appearance as Gollum. Serkis was constructed into a celebrity after the film's release and he was made into a particular kind of star, one who plays behind the motion-captured masks of digital animation. What he authorizes is a primitive form of the human at work, at play. Serkis is not the star. He is a happenstance star, ignited alongside the luminous celebrity of motion-capture itself, the holy grail of the alchemical combination of digital technologies with pro-filmic techniques, the present and future of the cinematic blockbuster. The animating force of this star is performance.

[11] Sergei M. Eisenstein, *Eisenstein on Disney*, 1st ed., Heinemann, Portsmouth 1989, p. 4.
[12] Joseph Roach, *It*, University of Michigan Press, Ann Arbor 2007, p. 36.
[13] M. de Certeau, *Op. cit.*, p. 105.

4. *Theater*

The real star here is not only performance but the theatrical, that texture of human touch even in the void of real contact, always an embodied promise of the theater. The live actor of the theater, known to be live and present through some promise that one could touch her if only the orchestra pit and proscenium did not gape so, separating standing actor and seated spectator. A central component of Serkis' achievement is his combination of years of theater training with motion-capture technologies, but why the theater? Animation, after all, is a cinematic medium, what special purchase does the theater have in uniting animation with pro-filmic cinema? What does *theatrical* mean and what does it have to do with animation? It indicates *the theater*, of course, composed of well known but still peculiar ingredients; stage-boards, script, actor. Yet it also signifies the thinking of theater, how theater has been thought about by philosophers and critics of art and culture, and to what place theater is subjected, often a negative space. Weber, for example, reads the theater through the negative Western projection of mimesis from Plato onward, concluding in one definition that the theater «marks the spot where the spot reveals itself to be an ineradicable macula, a stigma or stain that cannot be cleansed or otherwise rendered transparent, diaphanous».[14] Weber writes about both the moments where one is aware that one is watching a play and the falsehood, the unperformative action of theatrical performance. Theater has an unavoidable materiality set in duration that bleeds through, like a walking body. Tripping on theater's etymological relation to theory, Weber continues to define something of the medium of theater apart from a stained materiality and describes something very much like a walk or an entrance onstage:

> This irreducible opacity defines the quality of theater as *medium*. When an event or series of events take place without reducing the place "taken" to a purely neutral site, then that place reveals itself to be a "stage", and those events become theatrical happenings. As the gerund here suggests... such happenings never take place once and for all but are ongoing. This in turn suggests that they can neither be contained within the place where they unfold nor entirely separated from it. They can be said, then, in a quite literal sense, to *come to pass*.[15]

Theatrical happenings pass like the sweat of an actor passes through costume and soaks the stage-boards. Theatrical happenings come to pass, like passersby strolling on, delivering brief words, before walking off again. Although the audience is altered, we come and go from the theater which remains ready, the space unchanged for the next series of passes.

[14] S. Weber, *Op. cit.*, p. 7.
[15] *Ibid*.

Theater as medium is difficult to define and theatricality is even more diaphanous, not only because of its slippage with performance. Right before one pins theatricality down, it slips out from neat taxonomies and chaotic deconstructions to *pass* before one's eyes as almost the real thing. Theatricality passes at passes on passes for. In theater there are also moments of what Rebecca Schneider might call «the hard labor of the live», where what we pay for is the proximity to the smell of sweat.[16] Yet that sweat can also signal the play of the players. The theatrical is about effects and affects on space but it is also about play as somehow ineffective, unperformative, fake and phony, an uncleansable stain in the armpit passing off actions as less than impressive if not more than meaningful. Importantly, the cartoon animation shares in this theatrical revelation of fakery. The cartoon is often the stain upon cinema. The cartoon always calls out its artifice, foregrounding its connection to the human through shadows of movement.

Contrary to a trajectory of perfect human mimesis, special effects and animate characters in pro-filmic cinema also rely upon a revelation of their constructedness. Similarly to Hansen's assertion that the digital foregrounds its procedures of image creation, Dan North finds that the special «effect is characterised not by the absolute undetectability of the mechanism behind it, but by the interdependence of those elements».[17] Special effects and animation rely upon a theatrical phoniness, a stain that marks their mechanism at work, or perhaps even at play.

The same stain need not be the fake quality of theater but the real human actor at serious work in play, the texture of living performance, the stain of the actor bleeding through the character. Tom Gunning recognizes both performance and publicity as a texture, a touch of humanity in Serkis' portrayal of Gollum: «Yet one senses (or publicity for the film cues us to notice) the physical tremors, bodily textures, and careful emotional intonations Serkis as a human actor manages to bring to Gollum's voice. Serkis's performance therefore provides a human texture and even a degree of physical presence to an inhuman creature more effectively than sounds smacking of mechanical or electronic generation could».[18] It is crucial that the real human that provides «physical tremors» be relatively unknown, a non-celebrity, but talented, theatrically, toonishly talented. It is important, therefore, that Serkis be *not* famous before he assumes the role of Gollum as his work is not to provide an icon for the cartoon – he is not supposed to look like his character – but to provide the texture, the touch, the blueprint of a generic humanity at work under the digi-

[16] Rebecca Schneider, *Performing Remains: Art and War in Times of Theatrical Reenactment*, Routledge, New York 2011, pp. 128-137.

[17] Dan North, *Performing Illusions: Cinema, Special Effects and the Virtual Actor*, Wallflower Press, London 2008, p. 2.

[18] *From Hobbits to Hollywood: Essays on Peter Jackson's* Lord of the Rings*,* Ernest Mathijs, Murray Pomerance (eds.), Rodopi, Amsterdam/New York 2006, p. 334.

tal animation as captured motion. The inhuman void of animation is filled by the human stain, the un(a)voidable body of the theatrical actor as a blueprint, a texture, a theatrical medium.

5. *Performance*

Performance is something more than the theatrical, although it certainly entails the theater. Although performance as a term lingers around modes of play, it also attaches itself to non-aesthetic labor across various societal paradigms. In *Perform or Else: from discipline to performance* Jon McKenzie writes that «performance must be understood as an emergent stratum of power and knowledge».[19] Projecting "performance" across Foucault's *Discipline and Punish,* McKenzie writes, «performance will be to the twentieth and twenty-first centuries what discipline was the eighteenth and nineteenth, that is, an onto-historical formation of power and knowledge».[20] McKenzie traces performance across three paradigms: *organizational*, *technological*, and *cultural.* Organizational performance is evaluated in terms of profits, stock prices, efficiency, and labor management; cultural performance includes theatricality, aesthetics, and rituals; and «The most profound enactments of technological performance [...] are those cast and produced within the computer, electronics, and telecommunication industries».[21] Gollum straddles all three paradigms as Serkis's theater training provides *cultural* performance, managing a digital avatar (among other performance duties) reveals an *organizational* performance, and, by nature as a digital character, shares an undeniable link to *technological* performance through the computer. Serkis's performance, then, reveals the power of performance in this historical and technological moment.

6. *Index*

Despite constant change regarding the proliferation of images in the world and the (supposed) democratization of image making technologies, digital cultures can still be perceived to be in a time of transition: surrounded by images but shifting perception and apprehension of them. Cinema studies has been approaching this primarily through change in media, examining transitions from celluloid to video and the digital. In his article, *Moving Away from the Index*, Tom Gunning looks to movement as a way to correct the egregious refusal of animation within the field of film scholarship by privileging the index of the photograph: «animation has always been part of cinema and […] only the over-emphasis given to the photo-

[19] Jon McKenzie, *Perform or Else: From Discipline to Performance*, 1st ed., Routledge, New York 2001, p. 18.
[20] *Ibid*.
[21] Ivi, p. 11.

graphic basis of cinema in recent decades can explain the neglect this historical and technological fact has encountered».[22] Gunning hopes to achieve a supplementation of indexical and movement theories of cinema so as to reverse the negative rhetoric and outright dismissal of the animated film and to throw out theories about cinema's demise in the face of the digital revolution. What Gunning is pushing against is not so much the photographic base of cinema but the specific nature ascribed to photography that privileges the photograph's referential or indexical relationship to its object. Taken from Charles Sanders Peirce's taxonomy of signs, the index is a sign that bears a contact, but not necessarily a resemblance, to its object; like a footprint in horizontal sand without the vertical flesh of an upright leg. The index also calls attention to itself, it hails, marks, and points ("Look! Here", *this* footprint signifies what once stood) and, as such, has been used by theorists to account for the attraction and power of the cinema including cinema's connection with realism. As spectators we seek out a touch with reality, impressed through indexical contact with a prior (real) object (footprint, foot).

This indexical lineage stems from classical film theory, which finds its roots in André Bazin's essay, *The Ontology of the Photographic Image*. In it, Bazin famously writes, «The photograph as such and the object in itself share a common being, after the fashion of a fingerprint».[23] Peter Wollen then solidified the place of the index in film theory by grafting Peirce's definition onto Bazin's positing of realism as the ontological, aesthetic value of cinema. With the emergence of the digital, these semiotic theories come under threat. In *The Indexical and the Concept of Medium Specificity*, Mary Ann Doane writes, «The index makes that claim [verification of existence] by virtue of its privileging of contact, of touch, of a physical connection. The digital can make no such claim and, in fact, is defined as its negation».[24] Doane continues, however, to trouble this simple binary, claiming that,

> The transition from the digit [finger] to the digital is effected, first, by defining the most pertinent characteristic of the finger as its discreteness, its differentiation from the other fingers, and second, by emphasizing the way in which the fingers lend themselves to counting, enumeration. Yet what is elided here is the finger's preeminent status as the organ of touch, of contact, of sensation, of connection with the concrete. It could be said that the unconscious of the digital, that most abstract of logics/forms of representation, is touch.[25]

[22] Tom Gunning, *Moving Away From the Index: Cinema and the Impression of Reality*, «differences: A Journal of Feminist Cultural Studies», 18, 1, 2007, p. 38.
[23] André Bazin, *What Is Cinema? Vol. 1*, 1st ed., University of California Press, Berkeley 2004, p. 15.
[24] Mary Ann Doane, *The Indexical and the Concept of Medium Specificity*, «differences: A Journal of Feminist Cultural Studies», 18, 1, 2007, p. 142.
[25] *Ibid*.

That the digital cannot claim any contact makes it yearn for it all the more, hence the paratexts and promotional material surrounding motion-capture, which emphasize the texture of performance as the touch of the performer. The unconscious of the digital image, the hidden operative force buried behind the image, is, as Doane points out, touch. The digital admits that it cannot be an index proper but then resists and insists on its ability to make contact by "foregrounding procedures", as Hansen finds, or proliferating theatrical practice as Weber finds, all moving toward touch and presence. The digital hails itself.

To challenge the narrow definition of the index as trace, Gunning turns to cinematic theories rooted in motion, not to erase indexical theories of the photograph but with the intention to supplement them in order to broaden the theoretical base that underlies cinema.[26] Like many others he looks to the generation of what has been termed the affective turn in critical theory, espoused through Eisenstein's montage, to trace how movement can evoke emotion and maybe even empathy. This broadening, it would seem, should include careful analysis of performance paradigms as they manifest within the digital transformation of cinema. The index, however, is a broad sign, and already relies upon motion and movement as well as an interpretation of its affective motivations. The index hails with movement, points, and is also a trace of passing movement, where contact implies movement in the print, in its impression. The index does not draw a strict line between trace (thing) and tracing (action) and this is why Doane describes the index as «the form of sign that comes closest to this ideal limit»,[27] of instant as unrepresentable to itself. In other words, the confusion of trace (as frozen instant) and tracing (as movement) within the concept of the index is too entangled and, like theatricality, points to the stain of this entanglement instead. In this confusion, Zeno's paradox looms wide: the instant threatens to swallow movement just as movement, of course, passes the frozen instant by. What looms over the trace, the frozen instant of indexical contact, is the absence of the movement that made the impression. Absence is not only key to the past but also the attraction of reality located within the indexical photograph as an index can also be made apart from humans and this absence has mattered more to classical film theory, and is threatened more by the digital, than any notion of the index. The digital hails itself and in doing so both reveals the living presence but also implies their inseparable condition. The digital hails itself as a living cyborg.

[26] T. Gunning, *Op. cit.*, p. 40.

[27] M. A. Doane, *The Emergence of Cinematic Time: Modernity, Contingency, the Archive*, Harvard University Press, Cambridge 2002, p. 91.

7. *Absence*

Although the diectic point of a weather-vane in action, an example of an index for Peirce, can be captured as digital date or on celluloid, this touch with nature that seems to operate without man, leaving only the machine, is an attraction absent in both theater and animation; both mark the stain, and also the truth, of the human sign in and upon nature. This quality unites theater and animation in distinction to classical theories of cinema. Bazin's insistence on our obsession with realism as a fundamental aesthetic lure of the cinema focuses on the camera as a fly on the wall and without a human operator in the studio. He writes, «All the arts are based on the presence of man, only photography derives an advantage from his absence».[28] Bazin is aware that this lure, this promise of absent man, always recoils back on itself to reveal mankind larger than ever, gazing back through the glowing red lens of a cyborg eye. In his *Theater and Cinema – Part Two*, Bazin writes, «On the screen man is no longer the focus of the drama but will become eventually the center of the universe».[29] What is at stake between cinema and theater for Bazin is the actor and the camera. The theater, for Bazin, cannot pretend away a human subject as the cinema can by offering a place of substitution for the viewer. In the theater the actor remains undeniable, full of the potential to gaze over the footlights. The camera, on the other hand, promises a substitution, offering itself and its place to the viewer, offering the subject the position at the center of the universe. The advantage is undeniable as lure but it is also undermined by the digital image, which, as Doane makes clear, can only aspire to making contact, being present. We now see images as made by our devices, an image no longer holds the lure of realism, «without the creative intervention of man», as Bazin writes, and this crisis has forced film studies to scramble after new theories to explain cinema's attraction as its light shifts to the digital.[30] What is essential about the fingerprint that Bazin describes is that it can be discovered after a human's passing, it remains after. Rather than moving away from the index, perhaps a way to understand the shift in conceptions of the index around the digital revolution is to replace Bazin's fingerprint with Mickey's footprint, and find in Walt's passing performance a walking mouse.

8. *Presence*

Animation that makes its way into pro-filmic worlds – as one sees in such films as *Who Framed Roger Rabbit*, *Mary Poppins*, *Bedknobs and Broomsticks,* and *The Lord of the Rings* – has to contend with both the evidentiary glare of the photographic lens

[28] A. Bazin, *Op. cit.*, p. 13.
[29] Ivi, p. 106.
[30] Ivi, p. 13.

and the constructedness of the animator's pen in relation to each other. Something of the real impinges itself upon animation and something of the construct builds itself onto the real. The revelation of the mechanism, as North would have it, or the "foregrounding of procedures", as Hansen writes, arrives as an astonishing moment of realizing an *absence* in harmony with a *presence*. In *Who Framed Roger Rabbit* (Zemeckis, 1988) we take pleasure in the details of shadow across Roger's animated body but as a spectator I am astonished, amazed at Bob Hoskins' performance opposite... nothing... a cartoon to be added later on. Films that do not want to call out the toonishness of their animate characters, such as the case with *The Lord of the Rings*, depend upon another moment of recognized absence in the face of presence – the recognition of the camera operator.

Gollum makes his performance debut in the second installment of the *Rings* trilogy, *The Two Towers*. The second to last shot is a nearly two-minute long, single-take following Gollum's split personalities as they negotiate how to kill the traveling Hobbits he has promised to guide. It is a captivating performance and seals the narrative sense of the movie before the final shot rises above Gollum's lowly crawl to the top of the mountains, granting a view of the enemy's tower and the towering volcano side by side. The performance that prompts this image is certainly about betrayal, but it is also a play between a hand-held film, shot on location in the woods, and an animate creature's tormented crawl through dead pine needles. It is the play between absent man and captured nature that Bazin locates as a lure of realism. Two things stand out on tip-toe in this scene: 1) Gollum's feet are frequently cropped out of frame and 2) we are witnessing a camera-operator's lonely steps, following a performance that had been before and will be remade again, but is not (then) now.

Gollum's feet are cropped out of the frame for a practical reason. As a cartoon, his feet and hands do not actually disturb the grass and pine needles underfoot; he fails to make an impression, no footprints. To make the ground move in response to a body would require additional animation or pro-filmic tricks – such as bursts of air under the bed of forest loam. Instead, the camera crops out his feet and focuses instead on Gollum's enormous eyes and the texture of Serkis's schizophrenic facial and vocal performance. This fact is a theatrical reversal, where theatrical practices once effected cinematic framing, now the cinematic framing effects the theatrical. In the early days of cinema, "cutting off the feet" of a performer, cropping part of her body, aroused anxiety in spectators. In *Theater to Cinema*, Brewster and Jacobs find that for early cinematic audiences, «if larger-than-life-size figures are interpreted as closer to the audience than the screen, their lack of feet is a problem when there is no stage edge or footlight float to mask them».[31] No longer accustomed to

[31] Ben Brewster, *Theatre to Cinema: Stage Pictorialism and the Early Feature Film*, Oxford University Press, Oxford 1997, p. 167.

such devices as footlight floats, cutting off this theatrical performer's feet causes no alarm. Perhaps this is why James Cameron found the facial performance and capture to be the locus of the holy grail in combining pro-filmic and digital animation.
The film follows Gollum's face and Serkis' facial performance, but our movement through the woods follow absent steps. We are astonished once we realize we are watching a camera-operator follow nothing in the woods but a previously marked out performance script, first laid down by Serkis, and then filmed without him. Once the charm of performance has worn off, there is the sense of the foregrounding of procedure and the lonely dance of the camera-operator, following a performance that will be. The camera frames an absent performance marked by the operator's presence as an index, both trace and diexis, tracing the past performance and pointing to the framed animate future of Gollum's final scene.

9. *Walking*
Movement, of course, lurks on the borders of such grand terms as absence and presence. But movement – and specifically human movement – is also always lurking in the index, whether in its hail, trace, or perception. To highlight this, Peirce lays out his descriptive definition of indexical signs in *The Theory of Signs*, with two examples of walking: «I see a man with a rolling gait. This is a probable indication that he is a sailor. I see a bowlegged man in corduroys, gaiters, and a jacket. These are probable indications that he is a jockey or something of the sort».[32] It is striking that his first example of an index is a type of walk, and furthermore, that his interpretation of the man's profession from the gait demonstrates both indexical qualities of trace and deixis. The man's rolling gait acts as a trace, a remnant from his time aboard a ship, but it is also deictic in so far as it hails attention, as Peirce notes, «Anything which focuses the attention is an index», and causes the onlooker to «use his powers of observation, and so establish a real connection between his mind and the object».[33] Peirce uses walking as his first two examples in order to demonstrate the dialectic between trace and deixis, diectic footprints. This indexical connection between humans marks a particularly useful object in studying both the lure and the signification of the cinema.
Peirce is not alone in employing the trope of walking in a theory of signs. Michel de Certeau draws a comparison between walking and the speech act, concluding, «It thus seems possible to give a preliminary definition of walking as a space of enunciation».[34] For de Certeau, «there is a rhetoric of walking», where turns and

[32] Charles S. Peirce, *Philosophy of Pierce: Selected Writings*, Justus Buchler (ed.), Ams Press, New York 1980, p. 108.
[33] Ivi, pp. 108-110.
[34] M. de Certeau, *Op. cit.*, p. 98.

detours become «turns of phrase» and «stylistic figures».[35] What is important for de Certeau is that walking cannot be reduced to its "graphic trail", its line of trajectory between points, because walking is expressive and singular. No matter how much control an urban space exerts upon human trajectories, the act of walking remains a potential "space of enunciation" for a unique, singular subject even as it follows worn scripts.In *Agency and Embodiment* Carrie Noland similarly chases after the spirit of free agency that is birthed through scripted movement, or, in her own words, «*through* cultural frames».[36] Her larger project revolves around inscription and her exemplary object is the irreverent signature of a graffiti artist, a trace inscribed in spray paint. Between painted trace and performing body Noland looks to «gesture», «as a reminder that movement is not purely expressive but is culturally shaped at every turn. That such a reminder is necessary is made evident by the increasingly abstract use of the term "movement" in works that study new media and embodied perception in technological environments».[37] The «abstract use» Noland is referring to is the materialist approach articulated by technologically minded theorists such as Friedrich Kittler, who focus on technological paradigms of performance, privileging the movement of the machine. Noland's own project, by contrast, seeks to articulate and map ways bodies negotiate their entanglement with technological materialities. What is striking are the succinct ways she links up movement with power and the agency of motions that define the human through our affects and gestures and steps: «The moving body of the graffiti writer suggested to me that innovation is more than mere chance, but also that agency cannot spring from an autonomous, undisciplined source. What I saw as I watched was that *gestures*, learned techniques of the body, are the means by which cultural conditioning is simultaneously embodied and put to the test».[38] Often obscured by its utilitarian use and its lack of a constant substrate for inscription, walking is often a forgotten gesture of inscription, a fact that de Certeau makes clear, «If it is true that *forests of gestures* are manifest in the streets, their movement cannot be captured in a picture, nor can the meaning of their movements be circumscribed in a text».[39]

None of this attention to walking is surprising when one considers that the human gait is a primary distinguishing feature of humanity and has been linked in evolutionary biology to the formation of the human mind. In 1977 Mary Leakey and her team uncovered footprints formed by a pair of walkers that were 3.7 million years

[35] Ivi, p. 100.
[36] Carrie Noland, *Agency and Embodiment: Performing Gestures/Producing Culture*, 1st ed., Harvard University Press, Cambridge 2009, p. 11.
[37] Ivi, p. 7.
[38] Ivi, p. 2.
[39] M. de Certeau, *Op. cit.*, p. 102.

old, definitively ending a major debate in palaeo-anthropology by proving that bipedalism developed in hominids nearly one million years before the development of stone tools and a larger brain. In *Footprints in the Ashes of Time*, Leakey writes:

> One cannot overemphasize the role of bipedalism in hominid development. It stands as perhaps the salient point that differentiates the forebears of man from other primates. This unique ability freed the hands for myriad possibilities – carrying, tool-making, intricate manipulation. From this single development, in fact, stems all modern technology. Somewhat oversimplified, the formula holds that this new freedom of forelimbs posed a challenge. The brain expanded to meet it. And mankind was formed.[40]

Walking can be understood to function as an index of humanity, a person's past and present and it can also be a space of enunciation through which a subject may express their individuality. As Noland similarly finds in the larger framework of gesture, walking is both scripted and provides the space for improvised enunciation and expression. This is why walking is so important to the world of animation which seeks to transform the nonhuman (animals, objects, the inanimate drawing of a human) into believable, humanlike characters.

10. *Dreams*

Alongside, in addition, or in opposition to semiotic formations of walking lie the spacelessness of dreams and journeys of the mind. De Certeau himself moves from linguistic constructions of walking to the immaterial world of dreams, a world often aligned with the cinema: «After having compared pedestrian processes to linguistic formations, we can bring them back down in the direction of oneiric figuration, or at least discover on that other side what, in a spatial practice, is inseparable from the dreamed place. To walk is to lack a place».[41]

In addition to the actor and the camera operator, the animator can also occupy various sites and roles of performances. In 1968, Ryan Larkin completed his critically celebrated, Academy Award nominated cartoon, *Walking*. With his acute observations of human bipedal motion and his subsequent recreation of that movement through hand-drawn animation, *Walking* demonstrates how the animator's eye can capture and deliver cinematic movement, perhaps revealing that cinematic vision is now the way we all see and perceive human movement. Although Larkin employs a variety of animation techniques to compose his walking figures, the form of the film is composed of only two types of moving images: still images of people standing that are slowly moved into or enlarged and moving images of people walking, making hundreds of entrances and exits across the frame. The still images feature

[40] Mary Leakey, *Footprints in the Ashes of Time*, «National Geographic», April 1979, p. 453.
[41] M. de Certeau, *Op. cit.*, p. 103.

people standing still and looking out, as if they are staring at a passerby, and indeed they are, for as the camera moves into the image we realize that the passerby they stare at becomes the spectator or the audience. When the film cuts to images of solitary people walking, it is notable that many striding figures never advance in the frame, as each cell of animation rolls like a treadmill under their steps; although each footfall is unique (as the entire cartoon was drawn frame by frame), the steps themselves seem to compose the limits of the frame. Walking in *Walking*, then, becomes a technique for composing the limits of the cinematic frame while at the same time pointing to it. *Walking* is about cinematic motion that does not point to the frame so much as it steps up to it with the intention of crossing over. It also posits the animator as adept at motion-capture as any camera or computer motion-capture system.

11. *Delusions*

Since *Walking* promotes the technical skill of the animator's eye, it is little surprise that the biographic film of Larkin's life should be a digital animation, as both Larkin's skill as animator and the digital share in a void of contact with their object but promise an unconscious hope nonetheless. This lack of contact with an object can bring about an uncanny response as new animation forms struggle to find their way towards impressing reality or towards new ways to disturb. The perfect-but-not-quite-right look that registers as uncanny is often found in digital renderings of humans and is known among animators as "the uncanny valley". The hypothesis was introduced in 1970 by Japanese robot maker Masahiro Mori and it contends that as automatons, robots, or animated human figures more closely resemble reality spectators have increased responses of revulsion.[42] The "valley" refers to the spectrum of revulsion that corresponds to life-likeness. As an automaton approaches life-likeness (x-axis) the level of spectatorial acceptance (y-axis) dips into an uncanny valley, beyond acceptance into revulsion. The figuration of an iconic, celebrity face can easily lead to such responses, as the once human now assumes the mask of digital effigy. For example, Tom Hanks in the all digitally animate and motion-capture based film *The Polar Express*, evokes waves of uncanny responses as we adjust to this smooth animate version of a familiar face. The revulsion is an eruption of the unconscious, what Freud classifies as «the terrifying which leads back to something long known to us, once very familiar».[43] By something «long known» Freud means what is known to the unconscious, such as «repressed infantile complexes».[44] What is terrifying for the subject is not

[42] Masahiro Mori, *The Uncanny Valley*, trans. Karl F. MacDorman and Takashi Minato, originally 1970, http://www.movingimages.info/mit/readings/MorUnc.pdf.
[43] Sigmund Freud, *The Uncanny*, n.d., pp. 123-124.
[44] Ivi, p. 157.

the object itself, but the return, the rising of the unconscious, its movement into consciousness. In encounters with the uncanny, an unconscious aspect from the subject becomes grafted onto an object and that object then becomes, for the viewer, uncanny. According to Freud, the potential to create the uncanny sensation is already inherent in certain objects, objects that have the power to efface «the distinction between imagination and reality» and by any symbol that takes «over the full functions and significance of the thing it symbolizes».[45]

Whereas most animators seek to avoid the uncanny valley, Chris Landreth embraces it fully in his 2004 digital cartoon *Ryan*, which tells the story of Ryan Larkin and his subsequent spiral into drug and alcohol addiction following the success of *Walking.* Landreth uses a collage of styles, composited in the digital realm, to pull the unconscious out, merging it with the optical-unconscious, animating the inside as the outside. The figures look like motion-captured digital avatars, but follow no actual motion trace. Without motion-capture, Landreth's figures fall quickly into the uncanny valley, right where he wants them. *Ryan* features uncanny digital recreations of Landreth interviewing Larkin about his life, his animations and his addictions. Landreth has described his animation style as «psychological realism»,[46] painting the emotional world on the outside. With emotional scars made visible, Landreth's characters assume an almost zombie-like appearance, with emotional loss manifesting itself as holes in flesh, and monstrous, spikey neon cancers blooming out of scars. During one particularly striking moment in the film, Landreth shows Ryan one of his cherished possessions, an original still from *Walking*, a drawing Ryan has not seen since the day he drew it thirty-six years prior. In the film, Ryan Larkin's digital, uncanny finger reaches out toward the drawn still and the two mediums of animation meet each other. The uncanny finger touches the still and caresses it. By calling out the still, Landreth's film shatters the power of *Walking* – perhaps indicating the lack of motion in Ryan Larkin's career. Once the uncanny finger lifts up, however, the still figure suddenly jumps to life and it again begins to walk. Cinematic, cartoon motion is born out of a touch between the uncanny deixis and the cartoon still. Like dreams, these animations are spaceless, remaining in constant circulation like two sides of a moebius strip, coming into contact only through form. At the conclusion of Landreth's *Ryan* we see the digital version of Ryan Larkin panhandling on the streets of Montreal. A few years after the release of *Walking* the man behind it became homeless. For Larkin, walking transformed from a practice into a condition, the state of homelessness. Even if an animator can aspire to elegant motion-capture, the optical unconscious, like

[45] Ivi, p. 152.
[46] *Artfutura: Art + Thought*, http://www.artfutura.org/v2/artthought.php?lang=En&idcreation=16, accessed July 9, 2013.

the psychical unconscious, remains fugitive, sought after, and often left out. Yet its repressions can erupt as either dreams or delusions, oftentimes both, turning the dreams of the animator in the delusions of the animated. Ryan Larkin crafted his animations with such precision, a precision that both benefited and suffered from his drug use. The drugs eventually took over as animator, forcing Ryan to wander, homeless, placeless, an animation deluded into believing himself an animator.

12. *Gradiva*

As we step into the 21st century, echoes from another centenarian turn stride toward us. In *The Work of Art in the Age of Mechanical Reproduction*, Walter Benjamin calls out the photographic capture of a secret in the act of stepping out, *Ausschreitens*. His essay famously harkens for a moment where the technology of photography still maintains an essential aura that sparks and reveals what he calls the optical unconscious. At the turn of the 20th century, Sigmund Freud, notorious for avoiding comparisons between psychoanalytic discourse and film media, calls out another stilled step to illustrate various routes of the unconscious, its movements apart from and through time. In *Delusion and Dream,* Freud sets out to psychoanalyze a novel, claiming that, «Storytellers are valuable allies, and their testimony is to be rated high, for they usually know many things between heaven and earth that our academic wisdom does not even dream of».[47] Freud's discourse, however, dreams along the same routes as these storytellers and he aligns himself with artisans and the superstitious "ancients" in order to rally against the scientific claim that dreams are «purely a physiological process», and «not expressive movements».[48] For Freud, dreams are expressive movements, but so, too, are delusions that can animate a subject just as much as dreams fulfill a wish. What Freud is seeking are those human movements that seem to occur apart from the body and to find meaning in them. Not simply an act of hermeneutics but an attempt to capture and set down into the great discourse of the unconscious. He seeks out the animating force in the frozen still of the unconscious realm. This is one reason why, perhaps, Freud not only set out to psychoanalyze Wilhelm Jensen's *Gradiva* but placed the bas-relief of its titular character above his own desk. The story of Gradiva, as summarized by Freud, revolves around a repressed archaeologist and his delusional love for the stone figure of Gradiva, who, in turn, is a placeholder for his repressed childhood love. The young archaeologist follows his dreams to Pompei where he believes he will be able to spot her singular footprint on the excavated ash. In a reading of Gradiva at the end of *Archive Fever*, Derrida points out that the desire is also for the moment of presence, where the foot is still making the print, the leg still

[47] S. Freud, W. Jensen, *Op. cit.*, p. 146.
[48] Ivi, p. 145.

standing in ash.[49] Derrida claims that this is Freud's desire as well, to time travel in search of that past, repressed moment. At the very end of *Delusion and Dream* Freud articulates this wish most emphatically: «This was the wish, comprehensible to every archaeologist, to have been an eyewitness of that catastrophe of 79. What sacrifice would be too great, for an antiquarian, to realize this wish otherwise than through dreams!»[50] Derrida writes that this is to suffer from archive fever, the exhaustion of science to preserve the past as for an eyewitness. Archive fever is as much a dream as a delusion: the archive depends as much upon destruction as a preservation and this realization fuels the fever to archive.

As a creature of motion-capture, Gollum too articulates a kind of archive fever, which, like Gradiva, also circulates around the catastrophic forces of volcanic nature. The ring of power that compels Gollum can only be destroyed in the fires of Mount Doom, and despite his wish to save the precious ring for himself, his love and desire for the ring becomes the vehicle for its destruction as his final grasping movements take he and the ring down into the fiery magma. Without moving, Gradiva articulates the movement of a step out, just as Serkis' performance points to, as well as traces, movement beyond the frozen still of archival capture. Motion-capture reveals the age-old performing body, as moving archive, persisting within 21st century digitalia.

[49] Jacques Derrida, *Archive Fever: A Freudian Impression*, 1st ed., University of Chicago Press, Cambridge 1998, p. 97.
[50] S. Freud, W. Jensen, *Op. cit*., p. 285.