

OF FACT AND FICTION: REPRESENTING SCIENCE IN
ENTERTAINMENT FILMS

by

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A thesis submitted in partial fulfillment
of the requirements for the degree

of

Master of Fine Arts

in

Science and Natural History Filmmaking

MONTANA STATE UNIVERSITY
Bozeman, Montana

April 2014

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DEDICATION

For my parents, with love. This is all their fault.

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ABSTRACT

With a long history of blending science and entertainment, documentaries are the natural candidate for communicating science to the public. Nonetheless, ever since Flaherty asked Nanook to put away his rifle, documentary filmmakers have been altering, exaggerating, or even outright fabricating the realities they claim to represent. My thesis film, *Life on Ice: An Adventure to Remember*, 2013, represents my attempt to make explicit the tension between factual fidelity and narrative expedience within the context of a science documentary. In this essay I will analyze my thesis film, *Life on Ice*, and the films that inspired it, in order to understand the consequences of compromising the factual integrity of a film in favour of its narrative or aesthetic. My purpose with this analysis is to make clear the pitfalls inherent in making factual entertainment films.

INTRODUCTION

« *On a toujours cherché des explications quand c'était des représentations qu'on pouvait seulement essayer d'inventer.* »

“We searched for explanations when it was only representations we could ever hope to invent.”
–Paul Valéry *Cahiers*, 1933

A filmmaker is only human, and so, limited in perception, insight, ability, and by the failings of the medium of film itself, he proves incapable of representing reality absolutely, and must instead represent reality abstracted, a story tailored to conform to the expectations of an audience equally human.

While a fiction filmmaker is free to invent a story-world and a hero to conquer or be conquered by it, a documentary filmmaker strives to make the universe entire his story-world, and a factual, existing entity its hero. As a result of these simultaneous balancing acts – between reality and abstraction, filmmaker and audience, fiction and nonfiction – the documentary filmmaker compromises his claim to truth, and, if he is honest, attaches a qualifier to its expression, witness Werner Herzog’s “ecstatic truth” (1) or Errol Morris’ “pictures of belief” (Grundmann 8).

The scientist, too, is limited by his perception and the tools at his disposal, and so, incapable of understanding the functioning of the universe entirely, resorts instead to creating models that best represent what he observes. These are not models in the sense of an abstraction of scale in reference to the physical parameters of the object being abstracted, but, instead, a mathematical representation of the underlying functioning of the universe.

While a scientist is free to test the accuracy of his model with experiment, and so win the approval of his peers, the documentarian enjoys no such metric and instead measures his success by the critical, popular, or financial successes of his films.

Simply stated, a film – fiction or non-fiction, experimental or otherwise – must earn the trust of its audience. Through the effort of film-*making*, the filmmaker reveals his commitment to his audience, and makes them a promise: “I will not waste your time.”

In this sense, all film-worlds are created worlds, as all films are created by the actions of a filmmaker. Where popular entertainment films excel is in capturing and holding the attention of their audience. By superseding the need for discipline, entertainment films make it easy for an audience to stay focused on the story. Popular filmmakers achieve this mesmerizing, immersive effect in part through spectacle, but also by presenting a carefully constructed, self-consistent story world – as anyone can attest who’s ever been knocked out of the moment by an actor’s bad accent, an errant boom-pole, or an obvious plot-hole.

Finding himself beholden to a capricious popular audience insatiate for entertainment, the documentary filmmaker borrows the techniques and tropes of his more popular analogue, the fiction filmmaker. But, as any scientist will tell you, facts do not lend themselves well to a fulsome telling, and the documentarian soon discovers the Faustian bargain inherent in making a popular film.

The documentarian, like other filmmakers, makes a promise to his audience that he will not waste their time. Where the documentarian differentiates himself is in further promising to tell the truth, or at least his version of it. As documentary filmmakers

continue to borrow from the cultural language popularized and perpetuated by fiction films, the distinction between “fiction” and “nonfiction” becomes increasingly undefined, as does the documentarian’s claim that his film is a faithful representation of reality.

I constructed my thesis film, *Life on Ice* (Seyed Mahmoud 2013), around this notion. Scientists and filmmakers alike seek to explain the workings of the world through the creation of abstract representations of invisible reality. In my view, filmmakers seek to transpose invisible emotional realities into stories just as scientists turn invisible physical reality into mathematical models. In line with this parallel, *Life on Ice* represents my attempt to highlight in its subject matter and its style all the acts of construction that I used to create a representation of Dr. Patrik Callis and his accomplishments.

Life on Ice, like *The Thin Blue Line* (1988 Morris), and *Grizzly Man* (Herzog 2005), portrays the exploits and accomplishments of a factual person. In all three cases, it is the filmmaker himself and his search for understanding that drives the narrative.

Werner Herzog’s personal fascination with Timothy Treadwell is what gives *Grizzly Man* its structure and personality. In *The Thin Blue Line*, it is Errol Morris’ fascination with the fallibility of human perception that forms the heart of the film and not the explicit, factual answer the question, “Who killed Robert W. Wood?” In my film, *Life on Ice*, my interest was in representing the ways Dr. Callis finds meaning in his life, both through science and sport.

In all three films, the filmmaker builds a narrative and aesthetic framework around the life of a factual character in order to explore questions beyond the surface subject matter of the film. Herzog, Morris, and I all employed a range of fictional

techniques to make our films, including the use of continuity editing, dramatic recreations, a full orchestral score, visual effects, production design, color correction, and sound mixing.

None of these techniques are at all unusual in documentary films. Filmmakers routinely present fictionalized versions of themselves or others in order to produce a factual exploration of a subject. In the process of creating a film, a filmmaker transforms real people into *photogenies*, beings whose “moral character is enhanced by filmic reproduction” (Stam 34); beings neither entirely factual nor fictional.

In this essay, I will examine *Life on Ice* within the context of a selection of popular documentary films in order to compare my solutions with those of established filmmakers when it comes to problems of story, characters, editing, aesthetics, and theme. I argue compromise is unavoidable when a filmmaker represents factual stories within an entertainment context, and that both scientists and filmmakers might benefit from understanding the potential pitfalls and benefits of these storytelling techniques.

PLOT

Even at their most abstract, films remain an expression of light and sound, and, as such, are bound by the limits of the human senses. As in mathematics, there are rules and logic by which the filmmaker must abide if an audience is to understand his message. For example, although technology enables a filmmaker to capture an image in the ultraviolet or infrared spectrum, he must first transpose it from that invisible spectrum so an audience can see it.

Beyond the mechanical and technical functioning of film stock, digital sensors, and projectors, there are also the rules that govern the functioning of the story itself. Throughout the course of the film, a filmmaker educates his audience in the rules by which the storyteller and story-characters alike will abide. In a sense, all films are educational films, for all films take place in invented story worlds, paracosms unto themselves.

Unless the film is a farce, a la *Airplane!* (Abrahams Zucker 1980), the storyteller can never break the established story-rules he sets down lest the story become nonsensical. For example, it would be an extreme violation of the story-rules presented in *Grizzly Man* if Timothy Treadwell were to suddenly encounter Ferris Bueller on his day off.

This is simply a rephrasing of Aristotle's definition of plot: the events of a story must causally relate to one another in a plausible manner. Everything that occurs in the story-world has both consequence and purpose: there are no extraneous characters, no wasted dialog, no wasted shots; everything works to move the story forward.

It is important to note that this definition of plot applies equally well to experimental films, or films that otherwise challenge or subvert our sense of traditional linear narrative. No matter how torturous its telling, or experimental its execution, a film that is well-plotted reveals the agency of its maker, the one who decided what fit and what didn't. Without this agency, a film disintegrates into chaos, nothing more than noise.

Consider *Vertical Features Remake* (Greenaway 1978), a film that presents the work of ornithologist Tulse Luper according to the tenements of structural film-theory. Ignoring, for the moment, that "Tulse Luper" is in fact a fictional character invented by Peter Greenaway (Greenaway), *Vertical Features Remake* remains highly structured, exploring the prescriptions and consequences of structuralism in an orderly progression from one sequence to the next. Despite the near total absence of a discernable story, the film is nonetheless well plotted in the sense that it remains organized around a central conceit. Greenaway disregards any and all elements that could distract from his exploration of structuralism, and remains focused on the idea at the center of the film, a "celebration-criticism of [the] structural method" (Greenaway).

Even highly unstructured films are built on rules. Stanley Brakhage's *Mothlight* (1963) complies with its own set of internal rules, even if, in this case, they are more aesthetic-rules rather than story-rules. For example, the sudden intrusion of an interview, a credit sequence, or even a soundtrack into the otherwise random projection of bits of grass, leaves, insect wings, and flecks of paint would be an extreme violation of the aesthetic-rules established by Brakhage from the very first frame until the last. It is his

commitment to these rules that reveals his agency as the filmmaker; the man behind the curtain.

Documentary filmmaking has its own set of rules that arise primarily from trying to combine art and science into a single medium. Since the documentary genre likes to distinguish itself as nonfiction, the documentary filmmaker has the added burden of conforming to the real world, or at least to an audience's perception of what "the real world" ought to be.

As scientists well know, reality does not conform easily to faithful representation, and the documentary filmmaker must compromise his telling in order to satisfy the entertainment expectations of his audience. Whether an audience will forgive or condemn these compromises depends on their particular tastes, and the promises made to them by the filmmaker.

Aristotle's definition of "well-plotted" applies also to the process of science. When building his model, a scientist seeks to include only what is precisely relevant to the phenomenon he wishes to understand. Just as a filmmaker removes a distracting scene, or an unnecessary character, a scientist removes confounding variables in order to isolate only those most essential.

Like science, and filmmaking, even ice climbing can become an exercise in refinement when performed at the highest level. The most difficult pitches present so little ice to climb that they require an absolute economy of movement, both to preserve the strength of the climber, and the structural integrity of the ice itself.

In the case of Dr. Patrik Callis, I found someone who was both a world-class scientist and a legend in the ice-climbing community. Climbers, filmmakers, and scientists have all formalized their pursuit into a linear arrangement of beginning, middle, and end, an organization that forces the elimination of superfluous effort in favor of a clear connection between cause and effect as experienced by a central character around whom all consequences revolve: a hero.

CHARACTER

Stories of all kinds depend on characters. Natural history filmmakers, as a subset of documentary filmmakers, tell stories about nature. As scientists are easily characterized as explorers of the natural world, many of natural history films feature scientists.

Traditionally, documentary filmmakers portrayed scientists according to stereotype – sterile, pure, dispassionate, monotone, and monastic, the exact opposite of a classic Hollywood hero – in a word, boring.

Contemporary documentary filmmakers however, have learned from the popular success of fiction films, and have begun to cast their central characters from the mold of fictional heroes characterized by their moral infallibility and unwavering commitment to a goal. Films such as *GABON: The Last Eden*, (Cha 2007), show “dedicated scientists” who “defied the conventional wisdom” in pursuit of a goal “against all odds.” These scientists function as the single-minded heroes of the film focused on the dogged pursuit of a single outcome.

James is the central character in *Life on Ice*. An avid ice-climber and filmmaker, he is inspired to make a film about the athletic and scientific accomplishments of his biochemistry professor, Dr. Patrik Callis. In the process of making his film, James is moved to reflect upon his own experience and the nature of existence itself.

Why did I invent James? To tell a more cohesive story and allow myself the room to explore ice-climbing, science, and film as metaphors for the passage of time. I wanted to draw attention to the act of filmmaking so I needed a filmmaker as a main character. I

chose not to include myself in the film in order to make explicit the fictional wrapper around a factual story, to draw attention to my own actions as *filmmaker*.

James is a fabrication, the means by which we explore the world of a real person, Dr. Patrik Callis. By combining fact and fiction, I was able to weave together the seemingly unrelated worlds of art, science, and sport to show how they share a fundamental process of abstraction as experienced by the hero of the film.

The idea of casting a scientist as the hero of a story is not exclusive to filmmaking. As a discipline, journalism shares many qualities with documentary films since journalists, like documentary filmmakers, seek to simultaneously entertain and inform their audience with factual stories.

By the telling of David Quammen in his series for *National Geographic Magazine*, “Megatransect,” 2000, the scientist Michael Fay is a great hero, a character larger than life.

As a journalist, Quammen is a special kind of storyteller, one who markets in credibility. His title is science writer, but his writing includes no facts or figures, no explicit hypothesis, experiment, or conclusion.

Quammen instead turns circumstance into story, actions into characters, and words into believable reality. His talent as a journalist is that he is a storyteller, someone who succeeds in building a believable character portrait of Fay through a selective telling of events. Where science finds truth in objective observation, Quammen finds truth in subjective telling: “Whereas Fay had come to study the forest, I had come to study Fay, and adversity is a great illuminator of true character” (*Natural Acts* 266). The way he tells

it in “Megatransect,” Fay might as well be slogging through the leech-filled swamps of Dagobah, at once naïve and heroic, saddled with a diminutive native who criticizes him for his reliance on gadgets: lightsaber and machete; R2-D2 and GPS, X-wing and motorcycle.

Science finds truth in a careful catalogue of events. In fiction, however, a detailed list of a subject’s actions would only serve to obfuscate the truth of a character. Latour speaks of construction as an exercise in turning the “equally probable into the unequally probable” (244), the creation of order from disorder. For Quammen, “truth is a quicksilver commodity not so easily gathered as data” (*Natural Acts* 266). In other words, when it comes to storytelling, our imagined experience is more important than the factual one.

Just as Quammen constructs a character portrait of Michael Fay in *Megatransect*, I construct a portrait of Dr. Callis in *Life on Ice* by editing his words together from selections pulled from many different interviews. In this sense, I fabricated the story of Dr. Callis, but because I restricted my representation to his actual words and accomplishments, the result is not a wholly fictional character as with James, but merely an abbreviated version of the actual Dr. Callis, edited to fit within the time and thematic constraints of my film; that is, a character enhanced by filmic reproduction, a photogenie.

By abstracting Dr. Callis in *Life on Ice*, I preserve him as a part of my film. From the moment he’s captured on camera, the spoken and visual representation of Dr. Callis no longer reflects who he is, but what he was. Just as the ice encases a leaf in the opening

sequence of *Life on Ice*, Dr. Callis remains forever frozen in time by the power of the cinecamera.

EDITING

Errol Morris is a filmmaker whose paramount concern is the search for truth: “The truth is not subjective,” he says, but even he admits the necessity of the *pursuit* of truth (Grundmann 5). Though the uncertain identity of Robert W. Wood’s murderer in *The Thin Blue Line* forms the narrative core of the film, Morris borrows many techniques from the world of fiction filmmaking to tell the story, including continuity editing, highly stylized imagery, dramatic recreations, and a dramatic score by Philip Glass. Indeed, Morris names Douglas Sirk and Billy Wilder as his greatest influences, describing them both as “masters of Hollywood artifice” (Grundmann 7). Though Morris wraps his film in the stylistic raiment of fictional filmmaking, *The Thin Blue Line* ultimately seeks to present a truthful, factual answer to the question, “Who killed Robert Wood?”

Morris achieves this dichotomy between fact and fiction through his skillful application of filmmaking technique. For example, he describes his use of re-enactments not as recreations of reality but as “pictures of belief” (Grundmann 1). For Morris, recreations represent an attempt to “[explore] the intersections of the “fictional” and “real worlds” (Grundmann 1), yet the structure of *The Thin Blue Line* remains that of a documentary, a film “devoted to conveying factual information” (Nichols 101).

For example, in *Thin Blue Line*, Morris uses actors to recreate the accounts of witnesses. These recreations change as we try to understand exactly what happened that night on a dark Texas highway. Through the use of recreations, Morris makes obvious specific and crucial details, such as the ease with which an officer could mistake a blue Chevy Nova with a blue Ford Comet.

Beyond the subject matter of my thesis film (a student filmmaker profiles the life of his ice-climbing chemistry professor), I conceived much of the structure and style of the film to hint at the fundamental unity of both film, science, and sport – not as perfect depictions of reality, but as abstract representations of reality distorted by the imperfect lens of our physical senses.

For example, my use of continuity editing, and my occasional jarring deviations from it, indicate my awareness of the fabricated nature of films. This stylistic device is meant to call attention to the editing process itself, where the stitching together of discontinuous shots gives the illusion of continuity. This juxtaposition of one shot with the next creates what Eisenstein calls “impossible jumps through space and time” (Stam 463).

To this end, I used stylistic effects such as jump cuts, cross-fades, time-shifts, image manipulations, and computer graphics to emphasize the “impossibility” of the filmed images, but also to draw parallels between the scientific research of Dr. Callis, the sport of ice-climbing, and the process of filmmaking itself.

Examples of such “impossible jumps” in *Life on Ice* include everything from temporal paradoxes (James editing the movie in which he’s in); the dramatic compression or expansion of time (instantaneous transitions between seasons, climbers moving in slow-motion); and even jumps through the fourth wall from one film into another (the transition through the screen from James’ biography film and out into the audience as they watch his movie in a theatre, a movie-within-a-movie).

To elaborate on a specific stylistic technique, I can point to the several repeated on-axis cuts when characters walk either towards or away from the camera, such as when James climbs Palisade Falls, or when Dr. Patrik Callis walks into the biochemistry research building where he works.

I develop this technique of repeated on-axis cuts to its extreme in the sequence where James exits the theater where his film is playing. By intercutting the two sequences, James exits the theater door at the same time as two other characters enter the building he just exited both seconds before (as experienced by the audience), and hours later (according to the internal chronology of the film). By creating such temporal paradoxes I demonstrate that the act of editing allows the construction of impossible timelines while also drawing attention to my own implicit presence as the film's director and editor.

Multiple on-axis cuts require multiple takes with an actor so that the camera may be moved forward on its axis with every take. I use this stylistic device to reveal my deliberate forethought as a filmmaker. By consequence, even mundane events such as a character walking into the building become directed and so, refer to act of constructing a film, and a reminder of the presence of a filmmaker.

In *The Thin Blue Line*, Errol Morris makes clear the constructed nature of images by slowly zooming into the newspaper photographs of the witnesses until their faces abstract into a mess of ink dots. My own use of visual techniques to create impossible spaces is made explicit in the penultimate shot of *Life on Ice*, where the camera dives

through a lens and into James' camera before the digital image of a laughing climber shatters into composite red, green, and blue pixels.

AESTHETICS

In one scene from *March of the Penguins* (Jacquet 2005), a lost penguin egg slowly freezes and splits open after its parents fumble a crucial handoff from mother to father. The moment is incredibly poignant, so much so that one cannot help but wonder if the filmmakers rotated the egg to more beautifully view the fissure in its side grows as the egg slowly freezes.

While rotating the egg is clearly a premeditated manipulation of the scene for aesthetic gain it neither obscures the factual reality of an egg freezing nor does the manipulated image create a new, fictional narrative. Rotated or not, this egg was going to freeze.

In addition, *March of the Penguins* includes a Foley artist in its credits. Is the filmmaker dishonest to enhance the crunch of a penguin's footsteps in the arctic snow with the sound of a leather pouch being twisted and squeezed?

Just as a colorist uses digital tools to compensate for an incorrect white balance, a Foley artist compensates for the technological limitations of on-site recording equipment. The result is an artificial soundscape, but one that, paradoxically, gives a more realistic auditory experience.

Through my use of ice as a visual motif and the time-reversed sequence of falling leaves, I make a deliberate, aesthetic, distinction between the factual real-world of Dr. Patrik Callis and the metaphorical story-world of the film. The visuals are a promise to my audience that while I fabricated James' character and the world he inhabits, the facts I

include about Dr. Patrik Callis and his life are accurate. As such, the aesthetic of the film is critical to understanding the story and metaphorical meaning of the film.

NARRATION

With its “harshly beautiful images of penguins surviving and thriving during an unforgiving Antarctic winter” (Leydon 2005), *March of the Penguins* became a touchstone for the religious right with churches distributing free tickets en-masse proclaiming the film to be “[a passionate affirmation of] traditional norms like monogamy, sacrifice, and child rearing” (Miller). In France, the original version, *La marche de l'empereur*, elicited no such reaction, even though these two films are essentially identical, differing only in their music and the narration.

In his review of the original French version, Jonathan Leydon, a film critic for *Variety* magazine, characterizes the typical North American reaction to the voice-overs used in the French film: “It's easy to understand [the director's] desire to personalize the birds with anthropomorphic affectation. But it's difficult not to laugh out loud as nuzzling penguins pledge their troth as each other's "soul mate."” (Leydon)

In the original French version, actors give voice to the “thoughts and feelings” of the penguins “murmuring sweet nothings to each other” (Leydon). By contrast, the voice-of-god narration in *March of the Penguins* – an attempt to render the film “more traditionally objective” (Leydon) – only serves to obscure the underlying filmic conceit: this is a story.

In *La marche de l'empereur*, the use of actors to give voices to the penguins informs us that the filmmakers have imposed uniquely human constructions onto a non-human society. By contrast, by replacing the character's voices with a single, omniscient

narrator *March of the Penguins* wraps itself in a cloak of authority the French version is honest enough to discard.

In this sense, the American version presents its story as a true representation of nature while the film's visual narrative asks the audience to engage with the penguins on an emotional level, an unfair application of our uniquely human notions of family and morality onto animals that do not share our values.

The American narration is further misleading in that it leaves the natural phenomena it describes open to interpretation. For example, "guided by some invisible compass within them" (*March of the Penguins*) becomes an easy metaphor for the soul and so displaces the scientific explanation of an evolved avian sensitivity to the Earth's magnetic field. To a religious audience, the blizzard that rages around the huddled penguins becomes a metaphor for a hostile moral environment that threatens to overwhelm the spiritual lives of them and their children.

By giving the penguins human voices, *La marche de l'empereur* concedes that its characters and its narrative are fabricated to maximize the film's emotional impact. Because of this transparency, we are more easily able to frame our empathy as being misplaced, fooled as we are into caring about the penguins as if they were little tuxedoed humans. In this way the French version, unlike the American version, does not encourage its audience to affirm their beliefs as being based on some kind of universal natural law shared by penguins and humans alike. The comical penguin voices remind us that the film is a human construction and not a completely truthful representation of nature, fictionalized as it is to achieve a more engaging narrative.

All of these decisions are aesthetic compromises. While the French filmmakers make explicit the constructed nature of their film, the American filmmakers found the anthropomorphic penguins to be a distraction from the more powerful “natural” drama of the film, and chose instead to use an authoritative voiceover narration to conceal the act of fabrication called “filmmaking” that allowed them to organize the lives of penguins into entertainment.

In *Life on Ice*, I chose to externalize my narration through the voice of “James,” a character I invented. While the actor who portrayed James in the film, C.J. Carter, is an accomplished filmmaker and climber in his own right, the words he speaks are my own reflections on my experience getting to know Dr. Callis while learning to ice climb in Hyalite Canyon.

While the character of “James” is a fabrication, I was scrupulous in my representation of Dr. Callis. His words are always his own, and all of the facts, and stories about his life, his research, and the history of ice climbing in Hyalite Canyon, are (to the best of my knowledge) completely factual.

I chose this arrangement as a direct response to the authoritative role of the narrator in films such as *March of the Penguins*. Simply put, I wanted to test the limits of my audience: at what point do the fictional elements of a documentary film overwhelm its factual core? Exactly when am I allowed to lie to my audience, and about what?

THEME

This brings us to the issue implicit in both this essay and my film: ethics, or the responsibility of the filmmaker to be open about the process of making films. The very existence of the term “filmmaker” reveals the medium of film itself as a fabrication; an artificial collection of carefully selected visuals whose synergy creates a beauty that what we could not otherwise experience.

By labeling his film a documentary, a filmmaker makes a distinction between truths of fact and truths of feeling. In essence, the filmmaker makes a promise to his audience that the film will remain grounded in reality, even though the filmmaker may employ “the cinematic medium to seek realism in a philosophical rather than objective sense” (Grundmann 1).

By this metric, for a film to be considered a documentary film, it should reflect some particular aspect of the filmmaker himself by showing his own personal coloration or inflection of the subject, instead of being “strictly devoted to conveying factual information” (Nichols 101).

In the mockumentary *Incident at Loch Ness* (2004), Werner Herzog delivers the key line: “I’ve always been interested in the difference between fact and truth. [...] A deeper truth. It exists in cinema. And I would call it the ‘ecstatic truth.’” For Herzog, the “truth” that interests him the most is not a truth of facts, but the truth of telling.

It is for this reason that Herzog is explicitly present in many of his films – if not on camera, then often as the narrator. Timothy Treadwell is not the hero of *Grizzly Man*. It is Herzog himself who is the hero, an innocent who seeks understanding. By virtue of

his position as director, editor, and narrator, it is Herzog who drives the story, and not Treadwell:

What Treadwell intended was to show these bears in their natural habitat. [...] I found that beyond a wildlife film, in his material lay dormant a story of astonishing beauty and depth. I discovered a film of human ecstasies and darkest inner turmoil. (*Grizzly Man*)

Just as Peter Greenaway invented “Tulse Luper” to serve the narrative needs of *Vertical Features Remake*, I invented the character of James so that I could give voice to my own thoughts, memories, and philosophy within the context of a documentary, “non-fiction” film.

Just as David Quammen made a story out of a careful selection of events, so too does Herzog carefully construct his film out of the “one hundred hours of footage” Timothy Treadwell filmed while in Alaska (*Grizzly Man*).

Herzog’s Treadwell is clearly manufactured to serve the needs of the film, *Grizzly Man*. The Timothy Treadwell we meet and get to know in Herzog’s film is vastly different than the one we would have met had Treadwell lived to complete his own film. *Grizzly Man* is wholly Herzog’s film, and from Treadwell’s footage he chooses to show us those moments where Treadwell is at his best, but also includes Treadwell’s moments of self-direction as an aspiring filmmaker, and even his moments of uninhibited self-expression, the private ravings of someone clearly in turmoil.

From the very first shot of *Grizzly Man*, it is clear that Herzog intends to show us both the public and private sides of Treadwell’s character. After Treadwell finishes his carefully rehearsed introduction to the camera, “I am gentle, I am like a flower, I am like a fly on the wall [...] non-invasive in away way,” Herzog denies him the intended cut and

instead allows the shot to linger, revealing a wholly different Treadwell, one far removed from the “kind warrior” Treadwell sought to portray: “Give it to me baby. That’s what I’m talking about, that’s what I’m talking about, that’s what I’m talking about. I can smell death all over my fingers.”

Life on Ice expresses my view that science, sports, and filmmaking are all consequences of a fundamental human need to communicate.

As he indicates a series of graphs on his computer monitor, Dr. Callis delivers the key line, “These graphs tell the story of what we found.” On that line, I cross-fade through the white-on-black spikes of the graph to reveal a string of icicles hanging from Genesis 2, where Dr. Callis and some friends prepare to recreate one of the first ice-climbs ever completed in Hyalite Canyon. This visual connection between Dr. Callis’ research and his accomplishments as an ice-climber are purely my own invention.

Imagine a *Making of ‘March of the Penguins’* featurette that presents both the real film crew making the film and an actor playing a scientist who states a series of carefully selected scientific facts to support the anthropomorphic and moralized representation of the ideal penguin family as portrayed in the film. While he never went so far as to make the claim, the writer of the American adaptation of *March of the Penguins*, Jordan Roberts, is not a scientist, nor does he consider himself a documentarian (Vary).

In *March of the Penguins*, it is Jordan Robert and not Morgan Freeman who says with the authoritative Voice of God: “They can only watch as the ice claims their egg, and the life within it.” The narrator makes no explicit claims to be either scientist,

layman, or poet, but, by evoking the trope of a disembodied voice-of-god, the narrator becomes the ultimate authority within the film.

By making the power of the narrator explicit, *Life on Ice* asks the question, “At what point does an implicit claim to authority become an explicit attempt to mislead the viewer?” If a character wears a lab coat but never claims to be a scientist, is the filmmaker being intentionally deceptive, or would a lab coat merely fall under the realm of costume?

Scientists debunked the idea of suicidal lemmings in the early 1950s, yet the idea still persists to this day in the popular consciousness after Walt Disney’s seminal documentary series, *White Wilderness*, 1958, introduced the idea to millions of television viewers.

March of the Penguins reached a wide audience, earning more than \$77 million at the domestic box office (“Box Office Mojo”). How many of those viewers fact-checked the science?

In the case of *March of the Penguins*, the science is simple, and only a handful of professional scientists felt compelled to provide a public counterpoint to the film:

“Penguins are only monogamous for a single season” (“Animal Info”).

The most contentious science topics of our times are not so removed as lemming suicide, or the mating habits of emperor penguins, but instead present serious social and environmental consequences – climate change being an example, or the management of wild wolves in Yellowstone National Park, the elimination of poaching in Gabon, or public vaccinations. Without a close cooperation between scientists and filmmakers to

provide a mutual series of checks and balances, both scientists and filmmakers alike are free to forge fictions into facts.

CONCLUSION

If, as Werner Herzog claims, films are capable of simultaneously expressing “a deeper truth” that transcends the truth of facts, then the value of the term “documentary” is in the filmmaker’s claim to it. When Errol Morris chooses to label his film a “documentary” he makes a promise to his audience that he will restrain himself to photographic evidence, eye-witness testimony, interviews and other tangible, quantified particles of recollection. But despite his devotion to facts and research process itself, his films share a common theme in the subjective value of evidence. Morris at once uses images to construct his argument while simultaneously demonstrating that those very same images are unreliable, and acknowledges his own role in their fabrication.

My thesis film, *Life on Ice*, expresses my own view that science, filmmaking, and sport are all expressions of a human need to communicate. By choosing to label *Life on Ice* as a “documentary,” I make a promise to my audience that my film remains grounded in reality, even though I may employ “the cinematic medium to seek realism in a philosophical rather than objective sense” (Grundmann 1). Against this, I had to weigh my need to present a story and a hero that could hold the attention of an audience typically under-served by non-fiction films (namely, young people with an interest in sports).

Like a climber that fights against the pull of gravity with ice-axe and crampons, or like a scientist who seeks to abstract the functioning of the universe into mathematics, I used my own tools – camera and computer, shots, sounds, and sequences – to escape the bounds of physical reality and reach a higher level of experience.

As I become more and more practiced at telling compelling stories, there is really nothing stopping me from abusing the same techniques I used in *Life on Ice* to present a fiction as if it were fact.

Just as an athlete can reach places too remote or too dangerous for an unskilled person to venture, so too will the work of scientists become more and more removed from the understanding of the public. Likewise, as the filmmaker becomes more and more practiced at telling compelling stories, so too does he increase his ability to deceive.

When the magician says, “Nothing up my sleeve,” is he not, in fact, lying to us for our own benefit and enjoyment? Yet there remains an unspoken contract between an entertainer and his audience. If the magician forgets to wink, to give some acknowledgement that this is a performance, a fabrication presented as a gift to the audience for their entertainment, then he is no longer an entertainer, but a charlatan instead.

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