

STRANGE BEDFELLOWS: SCIENCE AND STORYTELLING
FOR BROADCAST TELEVISION

by

Andrew Wade Bell

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

May 2006

© COPYRIGHT

by

Andrew Wade Bell

2006

All Rights Reserved

APPROVAL

of a thesis submitted by

Andrew Wade Bell

This thesis has been read by each member of the thesis committee and has been found to be satisfactory regarding content, English usage, format, citations, bibliographic style, and consistency, and is ready for submission to the Division of Graduate Education.

Approved for the Department of Media and Theater Arts

Ronald Tobias

Approved for the Department of Media and Theater Arts

Joel Jahnke

Approved for the Division of Graduate Education

Dr. Joseph J. Fedock

STATEMENT OF PERMISSION TO USE

In presenting this thesis in partial fulfillment of the requirements for a Master's degree at Montana State University, I agree that the Library shall make it available to borrowers under rules of the Library.

If I have indicated my intention to copyright this thesis by including a copyright notice page, copying is allowable only for scholarly purposes, consistent with "fair use" as prescribed in the U.S. Copyright Law. Requests for permission for extended quotation from or reproduction of this thesis in whole or in parts may be granted only by the copyright holder.

Andrew Bell

May 2006

TABLE OF CONTENTS

1. INTRODUCTION.....	1
2. THE WILL TO NARRATIVE.....	4
3. THE BIRTH OF THE GENRE.....	7
4. THE CLASSICAL PLOT.....	12
5. THE DEPICTION OF SCIENCE.....	15
6. <u>YELLOWSTONE: REALM OF THE COYOTE</u>	16
7. <u>THESIS FILM: RETURN OF THE CONDOR</u>	21
8. CONCLUSION.....	25
WORKS CITED.....	27

ABSTRACT

Filmmakers exploring natural science subject matter that want to sell their work to broadcast television or theatrical outlets face a difficult challenge. They must somehow conflate two contradictory elements: natural science information and compelling storytelling. Looking at the roots of classical narrative, we can better understand why audiences have come to crave it. Broadcast television, in turn, caters to audience desire. This combination forces filmmakers to present natural science information in an exciting way, and has led filmmakers to employ time-honored narrative structures as organizing strategies. While audiences seem to favor material presented this way, it calls the accuracy of the natural science presented into question. This paper will explore how and why the use of narrative became common to natural science filmmaking, illustrate the inherent incompatibilities between the narrative and natural science, and consider the repercussions of this filmmaking model.

INTRODUCTION

We had a big meeting yesterday with [National Geographic] (in Washington) during which we pitched fifteen films. The Head of Development was emphatic: she wants conflict and she summarily dismissed about half the ideas as “too PBS-y” (that is, factual). She is savvy enough to know that ratings depend upon conflict and tension and that people want a good story, and not just information. It’s a dilemma. (Tobias, personal communication, 21 Feb 06)

Natural science filmmakers creating work for broadcast television have almost always attempted to create work that conflates two disparate elements: natural science and storytelling. The fact that narrative found its way into the television production model should hardly surprise us. Story represents one of humanity’s oldest and most inherent organizing strategies for structuring information by which it seeks to grasp the world. As audiences, we *expect* stories with classical narrative structures. Due to pressure from funding agents, which has often dictated that films appeal to the widest possible demographic, filmmakers have increasingly relied on storytelling to give form to their natural science subject matter in a way that could generate the widest popular interest. What began as the use of plot device, as time wore on, evolved into a more comprehensive adoption of complete story structures. Because films required such a substantial capital investment, reliance on type characterization and mildly adapted masterplots became commonplace in the industry (Abbott 119).

Natural science does not easily fit into the structure of traditional narrative, because natural science and story present ideas in contradictory ways. Nonetheless,

natural science films often present their subject matter within the structure of classical narrative. The import of examining this topic lies in questioning the extent to which filmmakers might be forced to fit natural science phenomena into preconceived and longstanding story types, in order to produce a work that can meet a broadcaster's demands for compelling story. Does phenomena within the realm of natural science actually transpire in ways that resemble classical narrative structures? If not, then to what extent has the material been packaged to fit into these structures? In the latter case, such a scenario would run contrary to the public perception of these films and their role in our culture. While our culture may look at natural science films as paragons of objectivity, education, and scientific accuracy, perhaps we overlook their artificial, commercial, and entertainment-based character. In the end, their true character probably lies somewhere in between these two poles. Ironically, the same audiences that might want accuracy in the natural science films they view, at the same time want compelling stories. We know this to be true simply because broadcasters, under most circumstances, want to reach as many viewers as possible and get the highest ratings, and they respond to audience demand to achieve this. So, in a sense, if we find our natural science material coming packaged inside of narrative structures, it's because we demand it that way. The question then becomes: What is lost and what gained by using a narrative filmmaking model?

The overarching value in using the narrative model, from a filmmaker's perspective, is that it allows natural science subject matter to reach the public

consciousness. The broadcast environment offers the best opportunity to reach the most viewers. The broadcast environment also requires compelling stories. Science without story has little or no chance of reaching the airwaves. So, this answers one half of our question. There is an obvious advantage to using narrative. The drawbacks of the narrative model are harder to pinpoint and prove. What is lost in the translation, that is to say, when science comes packaged in narrative structure? In a sense, only a scientist intimately involved with a story will truly know what distortions or inaccuracies occur in its retelling. However, we can look at the issue in a more general sense. There are some inherent structural incompatibilities between narrative and natural science, and by examining them we can better understand what may be compromised by the use of narrative.

THE WILL TO NARRATIVE

“It is difficult to see narrative film as a mere accident of historical circumstance,” asserts Derek Bousé, “when one considers that the will to narrative may be one of humanity’s most enduring, if not inescapable tendencies” (19). Human beings crave story. We hunger for the enlightenment hidden within the layers of a well-constructed tale. In Aristotle’s Ethics, writes screenwriting teacher Robert McKee, Aristotle poses the essential question: How should a human being live his/her life? More and more, argues McKee, we look toward stories for the answers to Aristotle’s question:

The story arts have become humanity’s prime source of inspiration, as it seeks to order chaos and gain insight into life...our appetite for story is a reflection of the profound human need to grasp the patterns of living, not merely as an intellectual exercise, but within a very personal, emotional experience. (12)

Indeed, across time and culture, we can see elements of narrative linearity in the earliest writings of humankind. Some argue that even the Paleolithic cave paintings at Altamira and Lascaux reflect a linear, sequential quality to their imagery. The word narrative goes back to the Sanskrit root term “gna,” meaning “to know,” and found its way into the Latin words “gnarus” and “narro” meaning “knowing” and “telling,” respectively. Narrative’s ubiquity in the history of human discourse leads some theorists (narratology has become a field of study in and of itself) to place it alongside language as a defining human capacity. Theorist Frederick Jameson, for example, describes it as “the central function or instance of the human mind” (Abbott 1). Similarly, Jean-Francois

Lyotard calls narration “the quintessential form of customary knowledge” (Abbott 1).

Roland Barthes’s comments on the universality of narrative among humans:

Moreover, under this almost infinite diversity of forms, narrative is present in every age, in every place, in every society, it begins with the very history of mankind and there nowhere is nor has been a people without narrative. All classes, all human groups, have their narratives, enjoyment of which is very often shared by men with different, even opposing, cultural backgrounds. Caring nothing for the division between good and literature, narrative is international, transhistorical, transcultural: it is simply there, like life itself. (qtd. in Abbott 1)

We can see why audiences might have responded so strongly to narrative structure, even when viewing non-human subject matter. The human desire to structure meaning with narrative is as old as human history itself, so modern audiences are only asking for what humans have always asked for in relationship to ordering new information. And when pictures began to come back from the savannahs of Africa in 1907, the imagery of distant lands, foreign cultures, and exotic wildlife was most assuredly new information.

The true power of narrative, film historian Leo Braudy asserts, can be seen in the influence of the American film industry worldwide. While to some extent an economic leveraging, it had at least as much to do with the fact that the narratives found in films had cross-cultural, general appeal. “The economic domination by Hollywood of the world film market therefore should not obscure the fact that for at least fifty years (1920 – 1970) American films were also giving audiences all over the world a good portion of what they at least thought they wanted” (Braudy 280). Audiences enter the realm of

storytelling with an instinctive or even unconscious anticipation of absorbing the flow of events within a classical narrative structure (McKee 64). With this in mind, it now seems clear that classical narrative structure would find its way into the representation of natural science. “The implicit but official American view of nature,” asserts Braudy, “is thus a fundamental, even fundamentalist search for master myths through which nature can be both revealed and conquered by story” (280).

THE BIRTH OF THE GENRE

When French physiologist Etienne-Jules Marey invented the chronophotographic gun to record the locomotive dynamics of birds in flight, controlling time and motion, he did so in the spirit of objective scientific inquiry. What he surely could not have foreseen was that his efforts ushered in what would become, arguably, a genre unto itself within motion picture film (Bousé 41). While at the moment of their inception, films involving wildlife may have had scientific motivations, these proved short-lived. Realistic renderings of natural history soon gave way to dramatic and sensational imagery of animals in the wild. And these, in turn, evolved into films with more fully conceptualized stories that implemented many tenets of classical dramatic narrative in order to capture and keep the audience's attention. In order to understand the direction that natural history film structure has taken for its first century of existence, and why it could not sustain itself as a purely scientific vehicle, it helps to consider the early pressures that fashioned its growth.

“When the vested interests,” wrote The Moving Picture World in 1910, “when the press, when the pulpit, when the law and learning come out, as they frequently do, to malign and defame the picture, we have the greatest man of his time (Teddy Roosevelt) present at a moving picture, and saying things about the scientific value of cinematography” (Mitman 9). Indeed in just the few short years between the birth of the new motion picture technology and Roosevelt's endorsement of it in the name of science, the form of motion picture films was already taking shape, and, for better or worse,

natural scientific authenticity found itself caught in the wake. If the birth of moving picture technology resulted from a desire for greater scientific observation, this impetus soon gave way to a host of external forces that asserted control over the new visual medium.

In the first decade of the twentieth century, the most popular form of nature representation came from realistic wild animal stories. Writers like Ernest Thompson Seton with his Wild Animals I Have Known and Jack London with his famous novel The Call of the Wild catalyzed a debate between writers and naturalists with respect to the authenticity of these animal stories. It was in the context of this social debate that motion picture emerged. “Would this machine (camera)...lead to a wider and more democratic appreciation of authentic nature?” asks Greg Mitman in Reel Nature, “Or would it turn nature into artifice, yet another imitation among the many that flooded the marketplace to entice an emerging consumer culture at the end of the nineteenth century?” (13) If we look for an answer to this question in some of the first films ever created, evidence suggests the latter.

Soon after the advent of motion picture, by the turn of the century films set in Africa gained in popularity during the genre’s infancy. The creators of these, in turn, quickly departed from a strict recording of animal behavior. The circumstances surrounding the efforts of two early film producers, Cherry Kearton and Colonel Selig, perfectly frame the question of how artifice could so quickly and decisively trump the adherence to authenticity in the representation of natural science images. Kearton’s

Roosevelt in Africa, released in 1910, brought home to American audiences wild African imagery for the first time. Kearton did not stage the scenes, which included a giraffe and a courtship dance of the Jackson dancing bird, but neither were they spectacular. Scenes of animal subjects appealed to audiences, it appeared, but only if they contained drama. Colonel Selig capitalized on this aspect of audience desire in a way that Kearton hadn't. Within a year of Kearton's release, Selig released Hunting Big Game in Africa. Unlike Kearton, Selig abandoned the idea of authenticity in favor of production techniques that guaranteed him sensational scenes that audiences craved. His film recreated Roosevelt's adventure in Africa, the identical subject matter as Roosevelt in Africa, only he achieved it on a backlot in Chicago. Hunting Big Game in Africa enjoyed considerable financial success at the box office whereas Roosevelt in Africa did not (Mitman 10). Here were two films with the same subject matter, produced at the same time, with markedly different results. The audience had spoken. Drama impressed audiences and delivered box-office success, authentic and unstaged stories did not. Soon after the success of Hunting Big Game in Africa, Selig embarked on production of a series of commercially successful and popular animal films like Alone in the Jungle (1913), In Tune with the Wild (1914), and The Leopard's Foundling (1914). In these films, though, he added to his sensational style by adding actresses as heroines threatened by the African jungle (Mitman10). Beyond the use of sensationalism, the introduction of protagonists illustrates the gravitation toward classical narrative construction.

From the beginning filmmakers had diminishing use for strictly constructed depictions of the scientific method in their representations of natural history for the popular screen. Films with strict renderings of natural science, it should be noted, were finding their own success and support with museums and zoos. From 1922 to 1927, Roy Chapman Andrews, director of the American Museum of Natural History's Central Asiatic Expedition, directed a five-year scientific and film expedition to the Gobi desert in search of the evolutionary birthplace of mammals and humans (Mitman 21). However, films produced with a commercial goal for widespread popular viewing had a different set of demands placed on them. These films needed composite distillations of the rare moments of action and spectacle that occurred in the wild, or crafted stories that could dramatize the depiction of scientific endeavor. What mattered to filmmakers and their backers was audience intrigue and attention, and if artifice conflicted with scientific accuracy in the process of achieving this, then that was considered a necessary evil. Profit requires an audience, and an audience requires presentation of subject matter compelling enough to draw it in and keep its attention. Perhaps this market reality helps explain why author Michael Crichton, when asked why unnecessary plot exaggerations always find their way into films, answers "Because it's a movie" (5). While Crichton's comments may refer more specifically to fictional pieces, they apply to nonfiction as well. The point is that the delivery medium determines the production method...and the subject matter must necessarily accept the plot requirements therein. During the filming of Jurassic Park, paleontologist Jack Horner felt dissatisfaction with the portrayal of a

dinosaur dig for which he had served as scientific consultant. (Again, for the purposes of this argument, this easily could have been a scenario in a nonfiction piece for broadcast.) Crichton, who penned the screenplay, asked Horner if the sequence, done accurately, could have fit into the same amount of screen time. Horner replied that it would have taken an extra minute. To that, Crichton then explained that a minute in film terms represented a dramatic difference in time, one that a filmmaker does not have the luxury of indulging. The reason? “In a narrative” argues Crichton, “verisimilitude is more important than veracity” (7).

THE CLASSICAL PLOT

To further illustrate the inherent incompatibilities between representing natural science in the form of classical narrative, it will help to clarify the essential elements of a classical plot. Many discussions of classical narrative credit Aristotle, specifically his seminal work Poetics, with developing the form of what we might call a classical plot structure. McKee suggests that by the time of the writing of the epic Gilgamesh 4,000 years ago, the extant story in written form, the essence of classical structure already existed. McKee defines “classical” as something “timeless and transcultural, fundamental to every earthly society, civilized and primitive, reaching back through millennia of oral storytelling into the shadows of time” (45). Thus his definition of classical plotting:

Classical design means a story built around an active protagonist who struggles against primarily external forces of antagonism to pursue his or her desire, through continuous time, within a consistent and causally connected fictional reality to a closed ending of absolute, irreversible change. (45)

Aristotle valued a sense of unity to the action. Participants should be able to recognize an identifiable causality between events in the plot. This in turn creates a sense of “wholeness” to the plot, which is reinforced by closure. Closure comes in the form of not only the closed ending that McKee refers to, but also more subtle types of closure. “Any breach of the story’s naturalistic causality” writes theorist N.J. Lowe, “let alone any

explicit acknowledgement of the artifices of storytelling, meant the collapse of the whole narrative edifice, and the exposure of the shame-faced author lurking behind” (62).

Similar to this notion of illusion comes the idea that stories must contain consistent realities of their own, the rules of which govern the actions and behaviors of the characters. Everything that happens does so for a reason that the audience can readily apprehend within the context of that narrative world. What does happen, in addition, should contribute vitally to the evolving story. Using the term “economy” to describe this, Lowe cites Aristotle: “The parts of the action should be organized in such a way that its wholeness is dislocated and disturbed if any part is transplanted or removed” (qtd. in Lowe 3). Within the confines of this closed, causal, and efficient structure, the centerpiece of the action around which everything else develops is always, and has always been... *conflict*.

“In almost every narrative of any interest there is a conflict in which power is at stake” (Abbot 51). The *agon* (the Greek word for conflict or contest) might be considered the single most essential structural element within a classical narrative. Nothing in a story moves forward except through conflict (McKee 210). The main players then took up roles on opposing sides of the *agon*, hence the terms protagonist (hero) and antagonist (hero’s primary adversary). Conflict without closure, then, creates states of excitement – suspense and surprise – that feed an audience. “All successful narratives of any length are chains of suspense and surprise that keep us in a fluctuating state of impatience, wonderment, and partial gratification” (Abbott 53). The ultimate

gratification, Aristotle's *catharsis*, could only come at the end and with final closure. As the protagonist reaches his goal the audience reaches its own form of emotional release through its identification with the themes – love, death, and survival – that the protagonist may have faced. With this understanding of narrative, we can now look at some of its incompatibilities with the essence of the scientific method.

THE DEPICTION OF SCIENCE

Michael Crichton, who in addition to his storytelling ability has an extensive background in science, asserts that it is impossible for the scientific method to be accurately portrayed in film (Crichton 2). David Milch, creator of NYPD Blue, similarly argues that “the scientific method is antithetical to storytelling” (Crichton 2). To begin with, much of scientific method reflects an internal and intellectual character, lacking in visually compelling physical action. By contrast, media for broadcast must be visual and external. The plots must move. The extended searches scientists often undertake in the pursuit of data and evidence epitomize the internal character in science, and these searches simply do not fit into the time constraints of broadcast/theatrical media forms. When a narrative demands that a film cut a search short, such as the case with Horner’s dig in Jurassic Park, the true nature of research becomes compromised (Crichton 8). Natural science also doesn’t contain the clear beginnings, middles, and ends that comprise the essence of narrative. In Crichton’s opinion, the problems one faces when attempting to conflate science with narrative for broadcast are insoluble. “The best you will ever get,” he argues, “is a kind of caricature of the scientific process. Nor will the problems be solved by finding a more intelligent, dedicated or caring filmmaker. The problems lie with the limitations of film as a visual storytelling medium” (Crichton 8). In light of these ideas, we can now look at a film with a clear narrative structure, and then comment on the possible repercussions of this model of representation.

YELLOWSTONE: REALM OF THE COYOTE

YELLOWSTONE: Realm of the Coyote, produced by Bob Landis and John Rubin and released by National Geographic in 1996, is a worthy film to examine because the film employs an easily identifiable narrative structure. By looking closely at how the film's narration works together with the images, one can better understand how a film carefully packages a natural science topic within a dramatic narrative. This understanding will then inform a discussion of how natural science representation might benefit from the conflation, and also how it might suffer.

"For thousands of years," the narrator tells us at the start of "the call of one great predator has rung out across this wilderness...the call of the coyote." (1:36) Soon after we learn that the coyotes, like humans, are "both cowardly and brave, a schemer and an opportunist." (2:28) This statement represents an anthropomorphic assumption, a common device in the representation of animals throughout the past century. The use of anthropomorphism furthers the goal of this particular unfolding narrative by humanizing the subject and creating favorable psychological conditions for an audience to accept the coyote as a bona-fide protagonist. A few moments later this process continues as the filmmakers decide to name an individual coyote, "Cain," that the film intends to follow for a full season in the park. The filmmakers assert that this naming decision derived from the scientific name for the coyote genus: "Canis." As we watch "Cain" wander, struggle, and eventually become a pack outcast, though, the allegorical connection to another Cain, of biblical repute, becomes undeniable. By virtue of the familiarity many

people have with the biblical story of Cain and Abel, this naming decision certainly helps to further our acceptance, either conscious or unconscious, of Cain as a disgraced protagonist struggling against the antagonism of a harsh and unforgiving world. From the narration we hear: “Over the next four seasons, [Cain] and his pack will face great trials. This is the story of that year. A year of perils. A year of struggle. A year through the eyes of Yellowstone’s coyotes.” (3:17)

And so the stage is set. We have our protagonist, Cain, and we have a finite period of time, one season, during which Cain and the pack will struggle against as yet unidentified antagonist, but one that will cause “peril.” Soon enough, the clear narrative structure unfolds. We see Cain mating with a pack female, and we learn that this female actually belongs to the pack alpha male. (14:25) Cain has transgressed against pack laws, we learn, and for his misbehavior he will pay a steep price. A chase ensues. Pack members cast him out of the pack. This sequence indicates the first major plot point, or reversal of fortune for the protagonist, and signals a transition from the beginning act into the middle act, in which we will watch Cain struggle against the antagonism of solitariness. “Now, exiled and vulnerable,” the narrator tells us, “Cain will be forced to wander the wilderness...alone. For a lone coyote the odds are never good. Cain’s chances of dying this winter have just tripled.” (16:24) We now understand the rules within the story. Cain has committed treason, and for that he is banished to exile. We now also know what is at stake for the protagonist -- death.

As the second act begins, we understand that Cain faces the challenge of feeding himself without the help of a pack. This act, it appears, will dedicate itself to highlighting the protagonist's struggle. First, we see a sequence that illustrates his tough new circumstances in which a golden eagle tenaciously fights Cain off of an elk carcass. (17:37) Next we see a successful hunting sequence, and learn that Cain's best chance for survival involves prey sources, such as voles, that he can find under the snow. (18:40) After this sequence, we see Cain prowling the lower valleys "looking for animals in trouble." Then, suddenly, the narrative jumps ahead several months to late April. We see him wandering through a snowstorm. "If a coyote knows loneliness," declares the narrator, "then this must be the loneliest time" (25:32). Apparently this is meant to signify the low point for Cain within the narrative, because the next time we see him, amidst uplifting music and following images of snow thaw, we learn that Cain has made it through the harsh winter.

In third act, the filmmakers introduce more antagonistic plot conditions. "Cain has made it through a trying season," declares the narrator, "but now he must do more than simply endure." (26:35) Cain must find a mate, a pack, and a territory or else his life will be "desolate, and brief." (27:00) So his struggle has taken a new form, but the stakes have not changed. Finally, we see Cain with another coyote, a lone female that has been wandering the park like him. (41:35) Cain has endured the ravages of winter, and he has now found a mate. He has resolved both of the major struggles that confronted him: surviving the winter alone, and finding a suitable mate. The music

uplifts. Then the filmmakers introduce one final plot point. Now, Cain and his mate must find a territory of their own and eventually a pack. For without these necessities, “they stand less chance of surviving, or of raising young.” (48:44) This dramatic buildup leads to the climactic scene in which Cain and his mate decide to challenge a pack for a carcass. The music becomes foreboding; it is a showdown. Fittingly, it happens to be Cain’s former pack. After some teeth gnashing and snarls, Cain takes over leadership of the pack. He has come full circle, from pack outcast to pack leader, within the circle of a single year in the park. It is a very obvious closure, filled with the catharsis that all narrative requires. (49:15)

By focusing on Cain as the protagonist, the film asks the audience to identify emotionally with a single individual and his struggle. In so doing, we can empathize with Cain’s struggle against long odds and feel an emotional connection to our own lives. We worry about Cain, hope he will not perish, and feel joy that he not only survives his ordeal, but even triumphs in the end. In that sense the film functions to satisfy the basic elements of classical anticipation. It uses a narrative to package natural science, and does so according to the vision of the filmmakers. If the story that the filmmaker presents with his narrative is factually accurate in terms of coyote life in Yellowstone Park, then one can argue that the narrative model *can* deliver scientific accuracy. While the character of Cain may not have always depicted the same coyote, and while the shots we see edited into sequences may not have occurred in real-time, we nonetheless feel that we have participated in a dramatic story that *does* occur naturally in the wild. Somewhere, and at

some time, a coyote pack has exiled a member for breaking pack rules...and that individual's predicament might have resembled the scenario into which the filmmakers cast Cain. So we can hope, without knowing for certain, that the impressionistic story is nonetheless accurate – that it is “true to life” – and that we come away from it with a more intimate understanding a coyote's world. I would argue that we do. But there is a price we pay in using this narrative model, even if we're not aware of it while watching the film. I'll use my experience during production of my thesis film, Return of the Condor, to explain this point.

THESIS FILM: RETURN OF THE CONDOR

As I worked through production of my film, Return of the Condor, I confronted the challenge of trying to conflate science and story. I didn't initially realize that I would face this challenge, but soon enough I discovered it. What I mean is that I set out with the goal of creating a scientifically accurate, educational film, a piece that would impart a sense of in-the-moment journalism about the situation surrounding the life of the California condor. During pre-production I researched facts and history extensively. I consulted with experts. I felt determined to tell as scientifically accurate a story as possible with respect to the accumulated body of knowledge about the condor species. In production, I shot all footage with an eye toward documentation. I never spent any time thinking about protagonists, conflict, or catharsis. I staged nothing, and I asked nothing from scientists other than access to their work and the occasional interview.

At the same time, however, I knew that I wanted to create a piece that might find its way into television broadcast. During the editing process I began to understand the challenge in front of me. With an almost unconscious understanding of what I needed to deliver (derived from countless hours of watching natural science programs on broadcast television) I found myself thinking about how to make my story compelling. How can I make this more exciting? How can I emphasize the stakes that are involved in this story? Doing research and capturing footage with a journalistic eye helped me get underway initially, but I quickly realized that those elements hadn't left me with anything that could capture an audience's attention. As I navigated this conceptual terrain, I noticed my work

taking on the conventions of the classical narrative model. Before I knew it, I was attempting to create as much drama as I possibly could from the footage that I had assembled. Any catharsis one might feel from my film, in empathy for the chick that has grown to near adulthood and now will have to survive, derives from a carefully constructed story that aims to achieve that catharsis.

In essence, the narrative structures of Yellowstone: Realm of the Coyote and Return of the Condor contain salient similarities. Like the creators of Yellowstone, I decided to create a story surrounding a single character. I couldn't bring myself to actually name the little chick (I worried about what the biologists and zookeepers would think), but I nonetheless created a composite character. Similar to Yellowstone in another way, I composited everything that I witnessed into an order that would fit my story's act structure. Both stories revolve around a single protagonistic animal character that is composited together; both employ composited sequences, compressed time, and conflict centered on the protagonist's survival against tough odds. Both films also clearly rely on this narrative treatment, moreover, for their broadcast readiness. Yellowstone has aired on television; Return of the Condor may or may not be complete enough to reach the air. In any case, no one can argue what each film gains from narrative in this respect. On the other hand, what have they lost? I can only argue with certainty about what Return of the Condor lost. Considering the films' similarities, though, it is not hard to see that Yellowstone might have been affected by narrative in a similar way.

Quite simply, what a film loses with the use of narrative is an adherence to factuality. By this I mean that the narrative in Return of the Condor relies on artificial constructions. I sacrificed scientific accuracy and could not include many parts of the story because they didn't fit into the narrative structure. For example, the footage of the chick at different stages of development does not depict the same individual from shot to shot. "Cain" was almost certainly constructed in a similar way. The composite characters allow a story to be told in a linear fashion. I didn't have the opportunity to film the newly hatched chick, seven days later, so I used existing footage of a chick at seven days of age. Presumably all condor chicks look this way at that stage so, ethically speaking, I can justify the narrative device. However, it is not factual. That simply isn't the same individual, and that signals a deviation from scientific accuracy and from factuality.

The need for conflict also creates conditions where a deviation from fact can occur. The "emergency" assisted hatching portrayed in the film, for example, actually occurs with some regularity at the Los Angeles Zoo. It was an easy and opportune moment, however, to glean some urgency from the facts and to create stakes within what had now become a narrative presentation. This adds to the narrative tension; it is a "life or death" moment in the film. The audience will never know the factual truth about these assisted hatchings, and the lack of drama surrounding them. This is just one example of a larger point. Narrative needs conflict, and in many cases this conflict is manufactured out of decidedly undramatic circumstances. At its most extreme, this has resulted in fakery

and staging of events to further a narrative. The point here is not to comment on the ethics of manufacturing conflict. It is rather to illustrate that with the along with the benefits of using narrative, come some costs with respect to delivering purely factual scientific information.

CONCLUSION

As I learned from my experience, there are no easy shortcuts to achieving a successful balance in the conflation of science and storytelling. Using a classical narrative structure in Return of the Condor helped my film to become more viewable and more emotionally compelling. The story has a beginning, middle, and end. It has some conflict, and perhaps some catharsis at the end for a viewer. While it hasn't aired on broadcast television, I believe that it might. Without employing narrative, I do not think it would have ever had the chance to reach broadcast air. So, my treatment of the condors gained immeasurably from narrative, at least insofar as the goal of broadcast exhibition is concerned. As a result, it is possible that many more people might have the opportunity to see these endangered birds and hear about their circumstances. To me, therein lies the ultimate benefit to using the narrative model to package natural science subject matter. Ultimately, it's about reaching people and allowing them to see and participate in a subject that one feels passionate about telling. For the broadcast environment, filmmakers treating natural science topics will continue to rely on narrative to package the subject matter. The natural science genre exists at the nexus of education, and entertainment. In fact, inside the walls of the Discovery Networks one often hears executives referring to "edu-tainment" with respect to their programming. Broadcasters clearly want and need the entertainment value for their programs. This mandate causes filmmakers to become impressionists, in a sense, as they create work for broadcast. We have to find ways to overcome the "insoluble" challenges to which Crichton refers. The

result, as he mentions, is usually a caricature of natural science. The work becomes a blend of educational information and entertaining story. Some might like to see the conflation of science and narrative lean more heavily toward educational value and factuality, others might prefer to see the subject matter presented in even more compelling ways at the further expense of pure factuality. This tension lies at the heart of the current paradigm for natural science filmmaking.

WORKS CITED

- Abbott, H. Porter. The Cambridge Introduction to Narrative. Cambridge: Cambridge University Press, 2002.
- Bousé, Derek. Wildlife Films. Philadelphia: University of Pennsylvania Press, 2000.
- Braudy, Leo. "The Genre of Nature: Ceremonies of Innocence." Refiguring American Film Genres: Theory and History. Ed. Nick Browne. Berkeley: University of California Press, 1998. 278-304.
- Crichton, Michael. "Why Science is Media Dumb." American Association for the Advancement of Science Annual Meeting. Anaheim. 25 Jan. 1999.
- Hand, Guy. "Quiet on the Set Quickly Dying Out." LA Times 8 Sept. 2004.
<<http://www.latimes.com/news/science/environment/la-os-naturefilm28sep28,1,5369760.story?coll=la-news-environment&ctrack=1&cset=true.html>>
- Lowe, N.J. The Classical Plot and the Invention of Western Narrative. Cambridge: Cambridge University Press, 2000.
- McKee, Robert. Story: Substance, Structure, Style and the Principles of Screenwriting. New York: HarperCollins Publishers, 1997.
- Mitman, Gregg. Reel Nature: America's Romance with Wildlife Film. Cambridge: Harvard University Press, 1999.
- Tobias, Ronald. Letter to the author. 4 Nov 2005.
- Yellowstone: Realm of the Coyote. Prod. Bob Landis and John Rubin. National Geographic Society, 1995.