HUMOR IN SCIENCE AND NATURE FILMS:

JUST BECAUSE YOU CAN,

DOESN'T MEAN THAT YOU SHOULD

by

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GLOSSARY

Comic Character: in comedy, a character whose traits include comic perspective, flaws, humanity, and exaggeration (Vorhaus 42).

Comic Premise: "the gap between comic reality and real reality" (Vorhaus 19); the notion of such a comic gap is central to humor in comedy. Note resemblance to the semantic concept of *frame-shifting* as a source of humor, and to the evolutionary biology definition of humor as "nonserious social *incongruity*" (see entries for *frame-shifting* and *humor,* below).

Comic Perspective: "the unique world-view, at variance with normal reality, that motors the character's comic engine" (Vorhaus 42).

Concept/Nonconcept: in pedagogy studies of effects of humor on learning, the relationship between humorous content and the topic being taught, where *concept* humor relates to the topic; *nonconcept* humor has no relationship to the topic (Kaplan and Pascoe 61); equivalent terms are *related/unrelated*.

Disparagement: in pedagogical studies of humor, this adjective describes any kind of message in which there is a target or victim who is being attacked (whether that target is the speaker herself, the listener, or a third party). In the context of filmmaking, we might consider more relevant victim categories, such as parties in agreement or opposition to the filmmaker in any polemical work, referring to these as the *in-group* and *out-group,* respectively (Gervais and Wilson 399).

Exaggeration: "the force that works on . . . comic perspective, flaws, and humanity" (Vorhaus 42).

Flaws: "the elements of a comic character that separate him from 'real' people. If he has no flaws, he's generic. If he's generic, he's not funny" (Vorhaus 42).

Frame – Within the study of semantics, Fillmore defines frame as a system of categories whose structure is rooted in some motivating context. Words are defined with respect to frame and perform a categorization that takes the frame for granted.

Frame-shifting – In the study of semantics, the term for the reanalysis of meaning when motivated by what is often a single word, which, when received, presents a new context for previously given information (continued on next page): "For example, until given information to the contrary, speakers tend to assume the pool in (1) is filled with water. (1) Everyone had so much fun diving from the tree into the swimming pool, we decided to put in a little water. Upon learning there *was* no water

in the pool we do a double-take, imagining the scenario in which everyone has fun diving into an empty pool. This reanalysis is called *frame-shifting* . . . " (Coulson 3).

Hostile/Nonhostile: in pedagogical studies of humor, a term applying to content that does/doesn't have an identifiable victim or target. In behavioral studies, women avoid hostile humor under the same general conditions in which men prefer it.

Humanity: "the quality of a comic character that unites him with the audience. Building sympathy and empathy, humanity lets us care" (Vorhaus 42).

Humor: in absence of any further qualification of this term, I am referring to Merriam-Webster's online dictionary's broadest definition: "something that is or is designed to be comical or amusing"; related to Gervais and Wilson's abstract definition of humor as "nonserious social incongruity" (399).

Pedagogy: "the art, science, or profession of teaching" (Merriam-Webster Online).

Play face: Gervais and Wilson's term for overt behaviors on the part of a speaker that signal humorous intent to the recipient (398; also Weisfeld 8).

Protohumor: From the biological sciences, a term describing humor based in physical activities, including but not limited to "rough-and-tumble play, tickling, physical mishaps, and pleasant surprise" (Gervais and Wilson 399).

Related/Unrelated: in pedagogy, the relationship between humorous content and the topic being taught (Wanzer et al. 216). Equivalent terms are *concept*/*nonconcept*.

Tendentious: in pedagogical studies, a classification of humor that includes sexual, hostile, and other forms of offensive or inappropriate content (as judged by the recipient; Bryant et al. 514).

ABSTRACT

In this thesis, I assert that humor is not *generally* appropriate for and applicable to science and natural history ("SNH") films. Considering perspectives and research on humor from fields spanning comedy writing, documentary film theory, evolutionary psychology, pedagogy, behavioral studies, etc., I'll attempt to synthesize some conclusions about treatments, forms and topics that can accommodate humor.

I begin by briefly providing some supporting evidence for the assertion that humor has played a minor role in SNH films. I argue that SNH filmmakers have used humor rarely because of specialized aspects of science that naturally result in the routine incompatibility of science with humor. In so doing, I'll refer to definitions, classifications, and rules of humor from an experienced comedy writer and scholar. I'll relate these principles of comedy to findings of researchers of humor in evolutionary psychology, which are relevant to my subsequent analysis of humor in existing SNH films.

I then refer to key pedagogical studies, some of which support humor in the context of learning, but the most relevant of which find negative effects of humor on adult learning. I also briefly examine an adult behavioral study from the field of "mood-management" that illuminates gender-specific preferences for different kinds of humor.

Continuing to draw on the various research fields' contributions, I analyze examples of some humorous SNH films.

I then provide a detailed breakdown of my attempts at humor in my original thesis film treatment, Attack of the Killer Lionfish, and explain why those attempts ultimately failed.

Finally, I synthesize some of the conditions under which documentarists might be able to successfully integrate humor, without harming their overall communication goals for the SNH film.

PREFACE

This thesis is a synthesis of information across a wide variety of fields. Rather than having the document become unwieldy, I have placed the necessary background concepts, definitions, and related information in the glossary. Please refer to it whenever I introduce a new term.

Of particular importance are the definitions of *humor* therein; I've chosen to work from the broadest possible definitions and concepts, rather than become entangled in infinite nuances and variations.

SCIENCE AND NATURE FILMS: NOT MUCH TO LAUGH ABOUT

State of the Art

While the totality of science and natural history ("SNH") films, as a body of work, is not utterly devoid of comedy, humor has played a relatively minor role. One recent benchmark of this fact is that, in an 86-minute long compilation piece, PBS's The Best of Nature: 25 Years, over 85 minutes of it is dramatic and moving; there are only about 30 seconds of humorous content. Around twenty seconds is spent showing a female ornithologist as she laughingly explains and shows us a moonwalk-like dance, imitating (and inter-cut with) the mating dance of her species of interest. The filmmaker has enhanced the comedic effect of this footage in two ways: through slow-motion, and by supporting it with Michael Jackson's "Billy Jean" on the soundtrack. The other ten seconds of humor is understated: a beleaguered cameraman on a frozen mountainside wistfully notes the likelihood that he's *been seen* by snow leopards "dozens of times," while he's never seen one of them, throughout months of searching. Another good benchmark of humor's insignificant role in the genre is Carl Sagan's sweeping series on the universe, Cosmos. I can think of only a handful of humorous observations Sagan made over the course of thirteen hours of content. For example, he chuckles as he recounts his experience as a child, asking an adult what stars were. The adult replied, tersely: "They're lights in the sky, kid."

A piece of evidence confirming the lack of humor in science and nature films is the total absence of the subject in such seminal works as Nichols' Introduction to

Documentary and Representing Reality, as well as Ellis and McLane's extensive 2005 retrospective, A New History of Documentary Film. Among the litany of references required for our M.F.A. program's comprehensive examinations, the only publication which addresses humor in documentary (sufficiently enough that "Humor" appears in the index) is Alan Rosenthal's third edition (2002) of the production-oriented Writing, Directing, and Producing Documentary Films and Video. In this work that addresses documentary broadly (rather than SNH films specifically), Rosenthal gives high praise to a few documentarians who have managed to integrate humor (into primarily social subjects; 69-73). However, he notes that US commercial networks and PBS "tended to restrict their documentary writers and producers to a very plain, realistic style" (70). (He contrasts US networks with BBC's relative openness to humor, mentioning a social documentary in which they supported its use [71].)

Historical Roots

Beginning in the late 1800s, scientists Étienne-Jules Marey and Eadward Muybridge developed still-imaging technologies to capture the rapidly successive movements of animals (Mitman 8; Felsch); Muybridge used these images to support scientific lectures (Herbert). It is within these educational lectures, illustrated by (effectively) moving images, that we find the roots of science and natural history (henceforth, "SNH") films. This context of scientific pursuit begat the tradition of sober, fact-filled, expository SNH films. In the following two sections, I argue that this serious

style of delivery of information is not an aesthetic or personal shortcoming among scientists or the flmmakiners documenting their work; rather, it results from the relatively specialized and esoteric and (often) urgent nature of their pursuits. These elemetns are incompatible with the principles and requirements of humor.

Causes and Effects of Scientists' Specialization

The many scientists I know have spent four to five years in undergraduate levels of education, amassing a foundational knowledge of their chosen subjects. By the time they obtain their advanced degrees, they often have an additional four to five years of specialization in a relatively narrow, intensive area of study. From my experience over twenty-one years as a working computer scientist, people involved in such pursuits in non-academic settings (for instance, in an industrial enterprise), also tend to become more and more specialized. As with any community of specialists, scientists adopt a relatively uncommon, and perhaps obscure, set of terms into their vocabulary (vis. "throughline"). One main function of this vocabulary is to make their communications with peers and superiors economical. (I acknowledge that it may also, secondarily, function as a screening mechanism through which scientists can identify non-peers.) The number of people who share a particular specialized experience base and vocabulary may number in the tens or hundreds, worldwide.

When I, as an SNH filmmaker, ask such specialists to be the subjects of my films for a general, lay audience, I quickly recognize the communication challenges I present to

them. They attempt elaborately worded explanations of scientific concepts that a lay audience can understand: these are often difficult to phrase in a humorous way, or the humor renders them imprecise in a way with which the scientist doesn't wish to be associated (in the eyes of peers who will inevitably watch and critique their content).

Specialists are so habituated to communicating in their unique jargon and vocabulary that most find it difficult to change their expressions; they are typically not at ease when needing to translate in this way. This unease can render them unsympathetic to the viewer. Also, the economics of filmmaking, with constraints on the length of any given film program or extended treatment, can result in forcing me as a filmmaker to choose between conveying the scientist's humanity (and humor), or the special knowledge they can provide.

These conditions of specialization among scientists, and their impacts on communication, lead to a violation of a key requirement of humor that comedy writer and scholar John Vorhaus lays out in "The Comic Toolbox: How to be Funny Even If You're Not." He outlines the main traits of a *comic character* as comic perspective, flaws, humanity, and exaggeration (30-46). The fact of specialization obscures the scientist's humanity: we do not understand her experiences, her pain, her truth, so we cannot see her as human; she is just weird, without being funny. With an insufficient understanding of her base of experiences, and knowledge, we may find much of her comic perspective and many of her humorous, exaggerated expressions to be incomprehensible. Contrast this resulting disconnect between the viewer and a real-world scientist, with the ultimate

connection we feel with the Jerry Lewis' "The Nutty Professor" in the comic world. In Professor Kelp's pining for his beautiful student, and his awkward and desperate attempts to become more attractive to her, we find his humanity, to which we can relate. Rarely would there be time for such a personal story line inside an otherwise science-focused film.

Urgency of SNH Topics

Beyond the basic challenges to humor in SNH films by virtue of scientific specialization, the topics of our films are often quite urgent. I assert that the presence of serious issues in the historical world—having significant implications for humanity or the planet—leads to another violation of Vorhaus' rules of comedy: the happy ending. He defines this as an absolute requirement, asserting: "If it were [to end] otherwise, then all the comic currency earned by the tale would be forfeited by its outcome, sort of a substantial penalty for unpleasant withdrawal" (99). Corroborating Vorhaus, evolutionary psychologists—who study humor as it functions in the real world—also recognize the happy ending as a fundamental requirement for humor: their very definition of humor is "*nonserious* social incongruity*"* (italics mine; Gervais and Wilson 398). In the context of serious consequences, humor does not work.

EFFECTS OF HUMOR ON ADULT LEARNING AND MOOD-MANAGEMENT

As preface, I submit that college professors' roles are highly analogous to that of SNH filmmakers: both groups attempt to convey potentially difficult information to a general, lay audience. I focus on adult pedagogy because (primarily) I am interested in making films for adult audiences. In light of the SNH filmmaker's concurrent need to acquire and keep an audience, I will also briefly examine a behavioral study in the field of "mood-management," which explores the *kinds* of humor that adults prefer to consume.

Humor's Effects on Learning

Researchers of pedagogy and related fields have amassed an extensive body of work on this topic, mostly conducted in the context of college classroom instruction. Because of the subjective testing methods that researchers have used in key studies, the conclusion drawn—that humor supports learning—should not be taken at face value. I assert that there are relevant limitations of which filmmakers should be aware, as they consider where and when to insert humor in SNH films (if, in fact, they wish their viewers to learn scientific and technical information).

Subjective Study of Humor's Effects on Learning

A case in point is Gorham and Christophel's 1990 study, "The relationship of teachers' use of humor in the Classroom to Immediacy and Student Learning," which is cited by 54 other publications, according to Google Scholar. Throughout this keystone

study's findings, the authors conclude a host of benefits to be gained by students whose college teachers use humor among their instructional methods.

This work addresses rigorously a broad set of relationships between forms of instructor humor, content, targets, etc., along with other factors relevant to the teachers' overall teaching style and class interaction methods, appeal, etc. Some interesting findings come out of it. For one relevant example, *self-deprecating (or otherwise tendentious) humor* had an unexpected effect. The study found that it constituted over 60% of the humorous content of both male and female instructors (56), and while the authors found that it *had a negative impact*, it was not upon the students' ratings of the teachers, but on students' interest in the instructors' subjects (55-6, 59). I assess this finding as highly relevant to my filmmaking efforts: if I care enough about a subject to make a film about it, I do not want to reduce the viewers' interest.

The study finds a modest positive correlation between humor and learning (53). While far from simplistic, this study has one limitation—*as regards any positive effects of humor on learning*—that diminishes my intent to apply its pro-humor findings: it fundamentally relies on student feedback, as its primary source of evaluation of whether learning has taken place (50). I argue that while student feedback may be an adequate source of data for other findings (for example, their judgement that humor is important to the appeal of the teacher), such self-assessment and reporting methods hardly provide an objective measure of learning. This inadequacy in this key study brings me to question the common wisdom, that humor enhances learning. Indeed, tests which objectively measure learning do not support that notion.

Objective Tests of
Humor's Effects on Learning

Kaplan and Pascoe, in another study in the college classroom setting, "Humorous Lectures and Humorous Examples: Some Effects upon Comprehension and Retention" (1977) *do attempt to objectively quantify learning*. In this work, college classes totaling 508 students were tested on the content of one of four versions of a lecture, one of which was seriously written, and the other three of which had humor that was either related, "concept" humor, "nonconcept" humor, or an even mixture of the two. The investigators tested the students' *comprehension and retention* immediately after the lectures, and again, six weeks later. At best, humor did not enhance students' learning much, and in some cases, *was detrimental*:

> Results of a . . . test revealed that those witnessing the lecture containing the humorous examples (concept humor) performed least well on items based on seriously presented concepts in the lecture. It should be noted that these students performed nonsignificantly better on the items based on the humorous examples. (3)

Another part of the lecture was structured to examine the common wisdom that humor stimulates attention, which then results in better learning: "One test item was based upon a concept presented immediately after a joke in the *nonconcept* version of the lecture" (64; italics mine). Note that the use of the nonconcept version avoids providing a reiteration of content that might reinforce learning. Comparing the results of the tests of students in the serious lecture with those in the nonconcept group showed

"no significant difference between the two groups on either of these test questions. However, performance on the postjoke item for the nonconcept humor group was slightly better . . ." (64).

The biggest payoff for humor seems to be in the area of long-term recall, as evidenced by the retest administered six weeks later, whose results the authors summarize as positively affected: "The posttest showed significantly greater retention of concept humor information among subjects who had been exposed to more humorous examples. Humorous examples may have served as cues for recalling information" (64). As a final limiter on my enthusiasm for humor in learning, the authors note, "Although their performance improved upon retesting, students viewing humorous lecture versions still did not perform significantly better than students viewing the serious lecture version" (64).

The one study *of humor's effects on learning* that I found to be most useful to my interests in humor's effects within SNH film (because the study used a film to teach — rather than live lecture—and also objectively tested for learning) was "The Effect of Humor on Learning in a Planetarium" (Fisher 1996). In this study, conducted at the Center of Science and Industry in Columbus, Ohio, researchers provided separate audiences (totaling 495 adults) one of two different versions of a film about general astronomy. One version presented information covering twenty subjects in a serious way; the other had the exact same technical content, but was augmented with subject-

specific humorous inserts every ninety seconds, into the middle of a concept. They alternately inserted humor into every other subject, for a total of ten out of twenty subjects. The viewers took an examination to test their *comprehension* right after the show (703).

Contrary to the popular idea of humor enhancing learning, the author found *no such benefit*: "The expected result of humor enhancing learning did not occur. Instead, this research suggests that when concept humor and integrated humor are used in a taped show at a fast pace of every 90 seconds there can be a negative effect on the retention of information" (710). By way of explanation of this effect, Fisher notes: "Earlier studies have shown that subjects focused on the humor instead of the concepts. The humor acted as a *distraction*. This project focused on integrated humor. It is very possible that humor is distracting, especially if the humor is integrated (Vance, 1987)" (italics mine; 710). I conclude that if you want your viewer to learn something, keep its presentation free of humor; I'll later analyze humorous examples in SNH films, with this conclusion in mind.

Given the study's fast-paced delivery of humor, with humorous content placed in the middle of the learning segments (which the author refers to as "integrated"), Fisher recommended that: "Future studies should be done on timing of humor in an educational setting. The integration of the humor is also related to timing. Visitors heard humor throughout the entire show. Contiguous humor might be more effective than integrated humor" (711). I'll analyze examples from some SNH filmmakers whose humorous treatments largely adhere to a contiguous, infrequent humor strategy.

Humor's Effects in Mood-Management

In behavioral science, mood-management studies analyze the choices that people make-- consciously or subconsciously-- about the messages they consume, in order improve a bad mood or maintain a good one. This area of inquiry has a lot of resonance with me, emotionally as well as intellectually because, in the wake of 9/11, I observed myself routinely preferring the calm, gentle, positive programs on the Food Network, which I knew I was consuming as a palliative.

Behavioral scientist Dolf Zillman (1988) describes a scenario for individual consumption choices that would seem to be generally relevant, but increasingly so to filmmaking, amidst our ongoing malaise of political corruption and economic instability:

> Mood-management through *hedonistic consumption choices* is most apparent is situations where behavioral options are limited. Individuals who cannot remove or alter the circumstances that placed them in bad moods by direct corrective action, but who have numerous message consumption choices available to them, tend to choose messages with strong positive hedonic qualities. Cheerful programs, such as comedies, seem particularly potent mood enhancers under these conditions and appear to hold great appeal to persons who are down on their luck. (sic; italics in original; 335)

Zillman continues by describing comedies as "the chosen antidote to bad mood" among college-aged women. Later he describes results of an applicable study by Medoff (1979) in which the test subjects were either frustrated (only) or frustrated and provoked (angry). He finds gender differences in the kinds of comedies chosen; beginning with the results for women:

> When frustrated, but especially when angry, they were strongly drawn to *nonhostile* comedy. In contrast, they exhibited little preference for *hostile* comedy when frustrated, and they clearly refrained from exposure to such comedy when angry. Men, on the other hand, failed to behave in accord with theory. When frustrated or angry, they minimized exposure to *nonhostile* comedy, and they exhibited a preference for *hostile* comedy when frustrated, but not when angry. (337)

So, as filmmakers, these findings present us with a conundrum *vis á vis* humorous content, if our audience is a general one: *there is no "one-size-fits-all" kind of humor* preferred among men and women, as we mood-manage ourselves in the course of our daily lives. We can avoid the issue all together by creating serious content, but then we fail to provide the mood-managing humor that viewers want.

ANALYSIS OF HUMOR IN SCIENCE AND NATURE FILMS

Throughout the history of adult science and nature films, a few SNH documentarians have employed humor. We'll analyze approaches to and specific examples of humor by Painlevé, James Burke, Mark Lewis, Brunet and Friedman, and others.

Satire and Parody through Absurdity: Painlevé

In the early through mid-1900s, Painlevé was an effective creator of comedy in science film. He had a scathing wit, as evidenced in his critique of the documentary film industry, "The Castration of Documentary." In that piece, in briefly discussing his viewing experience of "lamentable feature films," he notes sarcastically, ". . . I often find myself waiting in anticipation for the intermission so I can view the next installment of the commercial "White Teeth" (Bellows, McDougall, Berg 150).

Among the funniest of his works is L'amour de la pieuvre, or Love Life of the Octopus, in which the voice-over describes the general nature of the subject animal, its methods of locomotion, and courtship behaviors. I assert that this film meets Vorhaus' definitions of both satire ("attacks the substance of a social or cultural icon or phenomenon"; 71) and parody (". . . attacks the style of an art form"; 71). The parody begins to arise out of the juxtaposition of footage of the other-worldly octopuses oozing about, against early electronic music that evokes some combination of science fiction and horror movies. The physical voice of the narrator's concerned tone, in combination with

his emphysemic timber, pitch, rasp, and cadence (Berg 28), ultimately lock us in a horror-film parody. What is unclear from the literature is whether Painlevé intended this juxtaposition as humorous, or merely "chilling," as Brigitte Berg seems to suggest in her 2005 survey and analysis, "Maverick Filmmaker Jean Painlevé" (26). I surmise from the extensiveness of the scientist-filmmaker's studies that he must have come to know the octopus as a more or less benign creature. I can only assure you that viewers who are familiar with them find the effect of the piece to be pure satire of the animal, in the absurd way for which surrealists are known. (Although I'm aware that Painlevé rejected that label for his art, I must reply: "If the cephalopod fits, wear it.")

Performative Humor: James Burke

In 1978, James Burke wrote and appeared on-screen as storyteller in Connections, a performative series of one-hour films on the history of science and technology, and the effects of their development on humankind. Burke's voice-over, within a single thought, covers his movement between location-shots of real-world places and theatrical sets, costumes, and lighting, which he uses to depict historical characters, and to reenact their contributions to science.

Key to his humor throughout the series (actually, all of the *Connections* series) are his on-screen, direct addresses to the viewer. These provide a basis for the "play face" metacommunication, described by the evolutionary biologists (see glossary; Weisfeld 8; Gervais and Wilson 398). Burke often looks straight into the camera, with a dead-pan glance followed by a laugh—or devious smile, then a wink—to let us know it's all in fun.

His storytelling, narrative treatments of historical events allow time and opportunities for comedy, and provide him some safety while using hostile humor: routinely, the culture or person toward whom he is derisive is no longer alive. For example, he playfully lambastes Britain's recognized, but now past, imperialist tendencies. In one show in the Connections 2 series episode "Sign Here," he reports that the Brits were sailing around the world, ". . . planting the flag on anything dry enough to land on . . . and nobody is asking the local natives their opinion. . . ." In the original Connections series, during the show "Death in the Morning," he remarks on acquisitive explorers Francis Drake, Sir Walter Raleigh, and their contemporaries, describing them as having "a gutsy disregard for convention that we describe today as 'criminal'."

While most of Burke's tendentious humor is about dead people, he is not entirely politically-correct. He does approach the definition of hostile humor in some instances, employing (ongoing) stereotypes of his neighboring European countrymen. "Death" contains a sequence set in a 1700s street fair in Regensburg, Germany: the beer-guzzling revelers are shown juxtaposed against Burke's reference to them as "the sober citizens of Regensburg." He later uses a brass fire extinguisher from the period to—apparently—hose down the drunken crowd by squirting water out a window. The drenching is "confirmed" in the soundtrack by off-screen bellowing from the party-goers. In that same show, describing the less-than-perfectly executed flights of the first hot-air balloonists, he directly incorporates the French stereotype of their men being philanderers. He quips that the balloons were "being used for activities for which they weren't designed. . . . Frenchmen would take along their girlfriends. . . ."

Exploiting the performative mode, Burke blurs the line between fact and fiction when he inserts his own contemporary, humorous words into the mouths (or pens) of historical characters. For example, in "Death," he refers to the title of an ancient publication of Ptolemy's as: "All You Ever Wanted to Know About Calculation." He "quotes" an early user of the compass, noting his problems with magnetic distortions affecting its functions, attributing the remark, "You'll never guess what happened to my compass last week!" to this early user.

It is worth noting that Burke uses humor in his social commentary liberally, but in his scientific explanations of technology, he largely refrains.

For example, in "Death," he provides a detailed elaboration of a scientist's early experiments to define and prove magnetism, during which Burke's delivery is completely straight, lacking any humor. He is effectively "picking his spots," respecting both the science content and the contributions to humanity by pioneering scientists. Further, by restricting his use of humor to social commentary, this allows the humor to be comprehensible to the average viewer. In contrast, if he were to use humor in his science explanations, it might be "inside" or expert-level information, which might not be easily and quickly grasped by a lay person, and therefore could distract most viewers.

The end result of Burke's compartmentalization of humor into social commentary is that the frequency of the humor is much lower than in the planetarium study: in "Death," there are 10 humorous passages in total, spread out over the 60 minutes of content. In the multi-century-long histories that he weaves, the overall complexity of the story—in terms of characters, technologies, events, and outcomes—is great enough that it

is challenging to keep up with. From a pedagogical point of view, it's a wise choice that he doesn't overburden it with even more humorous interruptions.

Humor in Natural History: Mark Lewis

Contemporary filmmaker Mark Lewis has found a formula for comedic success in nature films: pick a funny-looking animal; show it frequently in all kinds of visually eccentric framings, activities, and locations; and interview the people who feel strongly about it. He routinely juxtaposes people with opposing feelings about the subject animal. Two of his relevant films include his 1988 piece, Cane Toads: An Unnatural History, and the 2001 effort, The Natural History of the Chicken.

The Natural History of the Chicken:

Lewis seems to have taken a page from Errol Morris' Gates of Heaven in his interview style, in which the interviewees are framed curiously in their home settings, with their pets. In Chicken, he opens with a meticulously well-coiffed, attractive, middle-aged woman sitting on a couch, in front of a piano, kissing her extremely flamboyant, fluffy, bright-white "silky Japanese bantam" rooster, wishing for everyone in the world to know the joy she's experienced with her pet. Shortly thereafter, she notes that he "loves Pavarotti"; we see the rooster transfixed, watching the television screen as the virtuoso belts out a high note. Lewis later shows this same woman swimming—á la Esther Williams—with the rooster in her embrace, then shampooing it, and giving it a

blow-dry. The filmmaker does not appear to be framing this woman in a hostile fashion; she just seems to be genuinely bizarre. This woman meets all of Vorhaus' requirements for the classic "comic character": comic perspective (*loves* rooster), flaws (too perfect), humanity (charming and gracious), and exaggeration (extremeness of comic perspective, flaw, and humanity) (30-46). The animal subject, though it lacks humanity, is also a comic character: we all have a basic idea of what a "normal" chicken looks like; this silky is *decidedly, eccentrically not normal* (see example at http://www.pbase.com/tomsview/japanese_silky_chicken).

Lewis achieves humorous juxtaposition (also Morris-like) by inter-cutting several interviewees who express their loathing and hatred for the hundreds of crowing roosters—and their farmer-owner—who moved in next door to these citizens' once-country, now-suburban housing development. Lewis gives us extensive, anguished testimony from the rooster-haters, along with b-roll footage of the neighborhood, and archive pictures of the poultry farm. The homeowners have taken the farmer to court: Lewis shows a reenactment of an observer tallying as we learn of his testimony: "20,000 crows per day." Inter-cut with all of this hatred and resentment is the salt-of-the-earth farmer interview. Lewis gives a sympathetic view of the farmer's love for the roosters, but the haters keep cutting in, until the lover ultimately questions why people would move to the country if they don't want to be near farm animals. (In contrast, the homeowners come across as petulant and unsympathetic, but is this Lewis' hostile intent? I found it difficult to answer that question.) These warring factions constitute what

Vorhaus refers to as “the law of comic opposites” (51-2), in which comic characters with opposite comic perspectives are paired off against each other.

A different chicken-lover tells of providing cardio-pulmonary resuscitation to her pet chicken, Valerie, and the attention the two of them had received from around the world, in the wake of the life-saving. Her delivery is incongruously matter-of-fact. Lewis cuts from a shot of the very intently gazing chicken, to one of an EKG monitor (apparently a shot from a television medical drama). I can safely surmise, from my childhood observations of chickens on our farm, that *none of them* know how to read an EKG.

Lewis also uses jump-cuts to humorous effect, as a rooster behavior expert demonstrates rooster crows and struts: we alternate between a two-button shot and a full-body reveal, as the expert executes strange steps and wing-flapping moves that anyone else would find too embarrassing to try. The filmmaker also inter-cuts rapidly between the expert imitating the crowing noise, and head-shots of the rooster crowing. As these inter-cuts progressed, I find it impossible to tell whether the sound comes from the man or the rooster. Through this editing style, the filmmaker creates a subtle, absurd satire of the expert, but I suspect this man knew full well how he would look, and was complicit in the satire.

Cane Toads: An Unnatural History:

Since Lewis’ Toads is an invasion biology story that is the most precisely comparable film—in terms of subject matter—to that of my thesis film, I’ll

explore it in depth.

Lewis' Toads is about the introduction and proliferation of the cane toad into tropical northern Australia. The animal of interest is as close to charismatic megafauna as a toad can get. The toad's humorous appearance keys off of its exaggerated width of head and accompanying mouth, and bulging eyes. In addition, the cane toad likes people, and in its adult phase, appears to be half the size of some of the toddlers who play with it.

In the opening shots, the filmmaker combines visual and sound elements parodying a monster film, showing us an extreme close-up of the toad's eyeball with Psycho-like music (we return to this shot later in the film as a comedic refrain). We then hear and see rapid-fire *vox populi* interviews, with haters speaking in thick Aussie accents about the toad's fecundity, saying you should hit with "a big stick," and recommending running over it with your car with "no hesitation." (After much toad-bashing, Lewis achieves both comedy and poignancy with a fast cut to an old woman who calls the toads her friends: a comic opposite of the haters.)

The next part of the film, on breeding habits, is rife with comic visual content, with many shots of males on females and males approaching females, juxtaposed against serious explanations of their reproductive behaviors. An American scientist attempts to "apply" a male toad to a female in his laboratory as he explains *amplexus* (the male's grasping behavior during mating). While this may be sexual humor, it doesn't feel like it: the toads just look ridiculous. So does the scientist, who we see fluttering his lips and humming, imitating the male's call. The filmmaker has the scientist do this repeatedly and extensively, to the point of it being embarrassing to watch. (It seems like vaguely

hostile, satiric humor, with the scientist being the victim.) As in Chicken, we cut between a male toad performing its mating call and the scientist doing his imitation; as we cut back and forth, the sounds become indistinguishable, between animal and man. Music then becomes the source of humor for the remainder of this segment: As the scientist explains the species' high reproductive rates with great concern, we hear schoolchildren singing sweetly "All Creatures Great and Small." Over the narration about tadpole development, we see medium shots of tadpoles wriggling about, and close-ups of their munching lips; we also hear Latino folk-dance music, and foleyed underwater chewing noises. While we could consider the presence of these comedic elements as hostile toward the scientist, instead, because the effects are fairly subtle, it all comes across as *nonsense* humor. It does, however, distract from the natural history details the scientist provides.

Comic perspective is the point of another *vox populi* vignette, in which we learn the results of the toads moving out of the water and onto the roads. In a strident tone, with a thickly nasal Aussie twang, a local tells us: "you'd flatten them out with the cah, and the stench would be like a school of mullet coming up the rivah." While we might not have a reference for *precisely* what a school of mullet smells like, we still get the joke.

In an example of visual humor, as a scientist and a concerned farmer explain the lack of synchrony between the toads and the cane grubs they were introduced to eliminate, the filmmaker poses and frames both of these human subjects in a way that resembles the head-on close-ups of the toads. The humans seems to have their shoulders

slightly forward and elbows perhaps slightly bent (though out of frame), creating a certain crease at the armpit, and roundness across the chest. It's difficult to tell whether the subjects knew of their "amphibious" appearance in this posture; the effect is a very ambiguous humor, with respect to any hostile intent.

In a later sequence explaining the infestation in southern Queensland, the filmmaker obviously achieves full complicity with the human in the scene, directing him for maximum comedic impact: a lit yard at night, a sea of hopping toads, two of them moving toward the bright light of a slightly opened door jam. Inside, a man takes a shower, singing an operatic serenade, to and about the toads. The two toads hop up into the crack of the doorway, gazing up at the noise from the shower. His singing stops: more Psycho-like music accompanies the shot of the guy tearing back the shower curtain to look out, fearfully, at the quizzical invaders.

Lewis has dug up some archived radio clips from "Tall Toad" stories, a call-in show in which people recount their toad experiences, and reporters pass on toad-related news. One reporter speaks of a crazy person who thinks he's a cane toad, who, after having jumped onto the road in front of traffic, has been convicted of disorderly conduct and fined $50. (Who needs sit-coms, when we've got whack-jobs like this?)

As in Chicken, Lewis juxtaposes supporters and detractors as comic opposites: we see a regional government official enthusiastically proposing the erection of a large brass toad monument, to celebrate the toad and attract tourists. The filmmaker follows this long, rambling on-screen proposal with a terse local who rants:

"This bastard can't be in his right mind. I can't see anyone wanting to erect a monument to this creature that's been brought in."

Lewis interviews another government official with obliquely hostile intent. This man reports his office's work to create a bound book covered in cane toad hide, which they've sent to Lady Di and Prince Charles as a wedding gift. The official recites Charles' profound thank you letter, as "God Save the Queen" plays in the background. The extreme pride of the official and the profundity of Charles' words over the gift of what is essentially dead toad take us to the height of absurdity. (I conjecture that the royal staffer who actually wrote the "thank you" note must have been rolling on the floor in laughter—primly and properly.)

In another segment, we learn from a scientist that the toad has venom that is deadly to small animals. We see a demonstration on how to express the venom from the toad's glands; we cut back and forth to shots of an oblivious mother at home, talking on the phone. The scientist utters "People have been killed" as we see the woman's toddler son chasing after a toad in their back yard. The comic tension builds as the scientist concludes, "With children, I think toads could be a real problem," just as the child touches the toad. Finally, the unaware mom gets off of the phone and goes to intervene. This is a classic example of Vorhaus' concept of *tension and release*: "Any time you have an audience . . . concerned about you or your characters, you have a certain amount of tension stored in the form of fear. The more dire the circumstance, the greater the tension; the greater the tension, the bigger the comic relief" (53). In this case, we are concerned

for the child's welfare; the tension builds as we learn of a possible fatal outcome; the comic relief comes only at the very end of the scene, when the mom intervenes.

Lewis later gives us his most satirical comic element, an interview with a cane toad drug abuser. This man appears in silhouette, apparently smoking marijuana. Parodying the stereotypical hippie culture, languid sitar music accompanies the abuser's stumbling speech about coming to ". . . see the world through the eyes of the . . . toad." We hear from a law enforcement agent that cane toad is a "schedule 2" drug, with consequences of life in prison. A scientist tells us that you boil the toad then drink the residue, which causes color hallucinations, a sense of time warp, and generally affected mental capacities. The drug user talks—almost unintelligibly—about getting started on toads: "little bit first . . . then larger . . . little bit first . . . i didn't like it."

A caption about a 1960 scholarly article, "An Unusual Act of Amplexus in Bufo Marinus," begins a later, performative scene. A male actor reconstructs the events reported in the article. In the distance, on a nearly empty road, we see a car driving up. The actor gets out of the car, and uses binoculars to see a small male toad attempting to mate with a large, smashed, dead female (the toads are real), as recitation of the article notes that the male continued the mating effort for eight hours. Cutting back to the actor in a head-shot, he lowers his binoculars and shakes his head slowly, disturbed and mystified. It's all gruesome, hostile humor at the expense of the toad, but it is just a toad, and there are too many of them.

With a human-tolerant, cute animal, the next scene had to happen: little girls dress the toads up and have a tea party; an Australian woman remarks about the toads, that

they're "the most contented little dolls . . . but so ugly." As a little girl plays with a toad, dancing it around, the music track contains a toad lullaby, "Cane Toad Lover." A wrestling match ensues between the girl and the toad. She tickles its tummy as it continues to squirm; she insists that "If you tickle his tummy, he likes it. . . ."

Lewis follows this up with a comic character in the form of an *extremely* attractive female ranger, who sincerely explains to us the sensual pleasures of touching the toad.

In the part of the story concerning the cane toads' predation of other animals, a researcher reports that a toad was found to contain in its stomach a rare native marsupial mouse. We see a shot of a live white mouse crawling around on a toad's head; shoot-out prelude music parodies a western movie as the mouse walks between many toads. A toad eventually eats the mouse in a slow-motion shot. After we learn of the deaths of native animals when they try to eat the toad, we hear from a local that the toads are ". . . as big a menace as the German army in world-war two."

This comic character's extreme framing of the threat justifies the following long clip, showing an approaching Volkswagen bus, weaving between lanes as it takes out toads all over the roadway. The driver explains, "I line them up with the driver's right front wheel. . . ." The weaving continues; we hear the screeching tires of the van—and explosion noises—as it hits toads. (Lewis provides another bit of poignancy at the end of the scene, by cutting back to the old woman toad-lover, who sadly remarks on people killing toads.) In this context, the toad are slapstick characters, about which Vorhaus states that "the comic premise is the gap between the slapstick character's self-assurance

and his manifest incompetence . . . " (70). I believe that toads lack the ability to introspect, and so must be utterly self-assured (at least they act like it). Clearly, the ones the driver is hitting are manifestly incompetent. Vorhaus further stipulates that "Slapstick comedy is abuse comedy, but what makes it work is the audience's awareness that the target of abuse is getting exactly what he deserves" (70). Lewis' villainous build-up of the toad personna makes us comfortable with the real-world-yet-slapstick demise of the invaders.

Just before the end of the film, Lewis satirizes the comment equating the toads to the German army in WW II: we see a black-and-white map of the toad's presence in Australia, as a speaker predicts the animal's spread, and monoculture; the black area of the map expands, just like Capra's maps of Hitler's areas of occupation in Why We Fight.

When we stop to consider that the preceding six pages of analysis covers only part of the humor in Toads, it is impressive, given that this is only a 46-minute film. Lewis achieves an extremely high density of humor in this nature piece, provoking laughter among serious subjects like the deaths of people, toads, and other animals, and destruction of native species (and habitats). However, it does come at the expense of comprehension and retention of the serious information: I found I was not remembering significant portions of the biology facts when I rewatched the film, a mere two weeks after my initial viewing. It's interesting that, despite the presence of much hostile humor, it doesn't seem like the filmmaker is truly being hostile (very often). It comes across simply as being a funny topic with characters expressing their own hostility in a way that ends up being humorous.

Hostile Humor

While hostile humor is not the only kind I found in Helfand and Gold's Everything's Cool, hostility was a hallmark of the piece. We'll contrast it to the humor strategy of Olson in Flock of Dodos, as these recent works both address controversial science topics.

Helfand and Gold: Everything's Cool

Judith Helfand and Daniel B. Gold are the filmmakers of the 2007 work about the global warming debate, Everything's Cool. Throughout this 89-minute piece, we see cartoon-like graphics, and hear music and sound effects that create a stylish and witty treatment of the topic. In fact, this humor creates the foundation of a polemical stance: proponents of global warming (henceforth, "GW") are nearly always depicted sympathetically, as humorously self-effacing, modern, and in-the-know. In contrast, the filmmakers select the most laughable and despicable of those who question GW, routinely framing them in a way that conveys the authors' hostile humorous intent.

The DVD menu sets the slick, playful tone: energetic conga dance music; glaciers calving, made to appear as if they are falling on White House; fires raging above the White House; Gore above the White House.

As the film opens, the graphic effects continue, accompanied by whimsical mystery music. Boxes are piling up; we learn that they are filled with climate change research; the boxes crash out of frame.

As the filmmakers cover a GW proponent's tour of the US (in a "gas-guzzling truck," the irony of which they playfully acknowledge), their hope is to raise Americans' consciousness of the problem. A *vox populi* sequence ensues, which offers the authors' first opportunity for polemical, hostile humor toward their on-screen subjects. They show us a stupid-sounding redneck, a rapture freak, a bible-beater, and an oblivious, dorky teenager, all deniers who cannot be respected.

These dimwits are followed by GW advocate-reporter Ross Gelbspan. Among his witty comments are: "Let's do climate change" as he invites the filmmakers in, and "My filing skills leave something to be desired" amongst the piles of documents he's collected and written over the years. The filmmakers show Gelbspan's humor, making him human.

The filmmakers use clever graphics, showing a hard line between an earth logo, representing NASA scientists, and "$" symbol for the bean counters at the Office of Management and Budget. This visual element supports a polemical account of these opposing interests, with the OMB staff characterized as "oil execs."

Later, an anti-GW lobbyist is shown as he talks, then the filmmakers "freeze" him in a still shot, just at the point when his lips are doing something awkward and unattractive. Later in the same sequence, the filmmakers show us a couple of other deniers with the camera at table height, pointing up their noses as they hand their business cards to the interviewer.

While amusing music can be heard regularly during graphical elements and over GW deniers and other "bit" players, there is routinely no such humorous sound accompanying GW authorities. The filmmakers show them respect by this choice.

The net effect of the hostile humor is so heavy that anyone who questions GW will simply not choose to watch the rest of the film.

Olson's Flock of Dodos

Olson's 2006 piece on the intelligent design debate, Flock of Dodos: the Evolution-Intelligent Design Circus, while also employing humorous graphics and sound, stands as marked counterpoint to the hostile humorous choices of Gold and Helfand in Everything's Cool. (It's worth mentioning that in Super Size Me, Morgan Spurlock also employs a combination of humorous elements based on graphics, music, and sound effects, similar to both Cool and Dodos.) In this performative film, Olson—an evolutionary ecologist—appears frequently on-screen, having conversations with people from both sides of the argument.

He casts his own beautiful, eccentric mother as a comic character, "Muffy Moose," who mugs and parades in various situations throughout the film. She functions nearly exclusively as a comic foil, though she is explicitly on the side of the evolutionists in the debate, as evidenced by her serious statements, and the big "Evolutionist" logo on her cap.

Like Cool, this film uses amusing animations, an early example of which satirizes historical Oxford debaters on the intelligent design ("ID") side of the issue, by turning them into dodos. Shortly thereafter, in another bit of dodo animation, a stage curtain falls on them. Later in the film, he fades a graphic of a group of eight dodos playing poker to a table full of his evolutionist science colleagues, thereby satirizing both of the comic opposites (whom he subsequently shows as smart, strongly opinionated, sarcastic and ill-tempered).

The only example I could find of any violation of respect for an intelligent design (henceforth, "ID") advocate came early in the film, when we're introduced to modern ID's founder, Michael Behe. As he discusses the basic ideas of ID, some graphical elements depict a bust of Darwin over a red-state/blue-state map of the US, which shatters to represent the emergence of ID across the country. Soon thereafter, there is a foleyed blood-gushing sound effect under speaker. This effect distracted me from the message enough that Behe's content was lost. Aside from this one example, Olson goes out of his way to be deferential when ID proponents are speaking, on- or off-screen; he shows them sympathetically. When you see Olson on-screen, he appears genuinely humble and kind in his interactions with them. By the end of the film, he states an explicit preference for the company of the ID proponents over that of his pompous science colleagues, whose personalities and prejudices Olson finds as the root cause of the failure of the evolution side, in the public debate. He leaves his opponents' humanity well intact, instead satirizing his evolutionist colleagues and his mom (much more than anyone with whom he disagrees).

He certainly does satirize the idea of ID, however, throughout the film. In the segment called "Rabbit Poop," a scientist explains the imperfections in the designs of digestive systems of the cow, horse, and rabbit. We see an animation of a rabbit sitting reading paper, turn around pick up poop, followed by night-vision shot of real rabbit eating its feces. (It's protohumor of extremely questionable taste—and you *will* laugh—and grimace.)

Later in the piece, again, in constrast to the hostile humor choices of Cool, Olson lets a conservative ID filmmaker be funny in his retrospective of the debate; the conservative jokes about some aspect of the ID side being an "evolutionary process." Overall, he treats his opponents so respectfully that this film *might not* preclude someone who questions evolution from watching it (or a subsequent Olson film).

Frame-Shifting Between Images and Characters

In semantics, *frame-shifting* is the re-examination of meaning provoked by a word or phrase whose apparent interpretation moves from one context to another (see glossary for longer definition with example). I now consider two films whose filmmakers implement an analogous frame-shifting editorial style, cutting between visual and character elements, as a source of humor.

Brunet and Friedman: Death by Design

In the poetic documentary, Death by Design, filmmakers Jean-François Brunet and Peter Friedman use subtle humor in their b-roll elements, through which they

metaphorically depict the biological processes of cell-signaling and cell death, alternating these images with microcinematography of real cells in their processes.

Many humorous shots show rather odd performances by groups of dancers and musicians. For example, early in the film, the filmmakers support a biologist's explanation of cell-signaling with several shots of a sports field filled with adult male performance artists. They are apparently dressed in puffy cotton diapers (okay—maybe those are toga-like shorts), holding long white cloth banners overhead, which stretch between them as they make a wave by swaying their bodies. The dancers function as comic characters. At first glance, this is such a strange and funny sight that it does distract me from the technical content of the biologist's explanation.

The filmmakers depict another cell process by showing a shot taken from a high perch, straight down upon another bunch of comic characters: a group of women in flowing full skirts, whirling about, while playing violins. Later we see these women disappear as the shot turns dark, but with some sort of glowing light sources outlining their instruments as they spin and play. We're getting used to the concepts of cell-signaling, so we accept (and just enjoy) each new visual metaphor a little more quickly. This seems like calculated mood-management on the part of the filmmakers, trying to constantly create enough visual interest to keep the viewer engaged, as they introduce technical details of biology.

A bit more accessible to the average viewer are excerpts from a silent film comedy, in which the main slapstick character is being told to go kill himself. As the

biologist-narrator explains that cell death is the result of signals from other cells, the actor fails repeatedly in a variety of lame attempts at suicide: he accidentally shoots a male authority-figure when the gun he's rigged to a door knob spins to point away from him; he ties a rock around his waist, and jumps off a bridge into ankle-deep water.

Beyond the humorous visual metaphors that the filmmakers provide, the primary source of comedy is a middle-aged, white, American male scientist, Robert Horvitz, during his on-screen interview footage. At one point, he grabs a tablet and draws a Pac-Man-shaped cell that is coming to eat another cell, as he describes the biological garbage-collection process for dead cells. We're initially distracted by the thought of this renown scientist drawing this very whimsical looking figure, but since he continues to explain and draw for another 20-30 seconds, we have time to get back to his words and figures: we assimilate the idea, if not the science.

This man's geeky appearance—bespectacled, pale-faced, balding, and with the little hair that he does have sticking out in all directions—and his demeanor embody the *stereotype* of Jerry Lewis' "The Nutty Professor." Our scientist knows this about himself, and plays with it. He describes a particular nematode, a microscopic worm that is widely used in cell research, as he gives us a tour of his lab. He stops at the stack of worm-filled petrie dishes to let us know that they have "somewhere between 10-to-the-9 and 10-to-the-12 worms here—but they're not all out crawling around—some are frozen and asleep." He chuckles and gives us a self-aware grin—he knows he sounds like a total science nerd.

His uses of Pac-Man-like figures and worms in his humorous attempts also allow him to succeed with a lay audience—because we know these references, so we get the jokes—and because, by using them, he and the filmmakers increase his humanity to us.

Jeremy Roberts' Atlatl

Montana State University - Bozeman MFA student, Jeremy Roberts, created another film that manifests frame-shifting, for his first-year project film in 2006, called Atlatl. Now viewed about 17,000 times on youtube.com, this 5-minute piece shifts between three different personnae of the single, feature character: the hunter, "Atlatl Bob" Perkins; the historian, Bob Perkins; and the physicist, Dr. Robert Perkins, as these characters demonstrate and discuss aspects of the ancient hunting weapon of the film's title.

All three of these personnae are Vorhaus' comic characters, unto themselves, with strong comic perspectives: the physicist verbosely and inaccessibly describes his science; the hunter is a drunken caveman (literally-- he's drunk during that scene; Roberts pers. comm.); and the historian expresses his disdain for "the bastard who introduced the bow and arrow to society."

One of the greatest comic moments comes as the physicist personna writes an involved, obtuse system of equations on a blackboard, lecturing about the calculation of the spring-motion-generated velocity of the weapon in flight. He draws a big mathematical symbol on the board as he starts his conclusion: "And that all sums to . . .";

you as viewer are deeply fearful of where the science is going at this moment, when the filmmaker frame-shifts to hunter Bob inside a cave, lit by a blazing fire, who satirizes his own physicist personna by ending the calculation: ". . . a shit-load of groceries."

Humor in Music and Sound in Luc Besson's "Atlantis"

Luc Besson's 1991 film, Atlantis, is a poetic underwater documentary that—after the initial introduction to the ocean realm—has no narration. Beyond the comedic aspects of the animals' appearances, the film delivers humor primarily through its original music and anthropomorphic sound effects.

The filmmaker uses crowd walla at several times during the film, to suggest the presence of an audience watching the proceedings. Sometimes the audience exists off-screen, such as when carnivalesque walla plays over footage of sea snakes swimming to the tune of modernized belly-dance, suggesting a busy square filled with remarking passers-by. In a later scene, the "crowd" is on-screen. A schoolhouse class bell rings and the kids' and adults' voices start, as the camera moves with a large school of fish who are swimming through a ship wreck.

In a sequence showing a large colony of Galapagos seals cavorting, composer Eric Serra uses a very distorted, heavy-metal guitar to accompany their underwater acrobatics under rolling waves and between rocks; the filmmaker has sped up the footage, to provide a disorienting feel. A vocal track fades in to support the melé of top-gun action with "See why you dance in the sea and you're feeling bad, so bad?" The

distorted, guttural, metal guitar riffs come back as an iguana forages underwater amongst the seals, being tossed about by the wave action. We hear a foleyed human groaning sound effect as the cameraman inadvertently smashes the lens into the iguana; the groan is "from" the iguana, not the human. The seals come over to harass the iguana as he clings to a rock: just as they coax him off his perch, the vocals deliver the seals' concept: "You've got to move your body—dance!" The seals return as the stars in a later scene about mating, accompanied by a disco-like dance tune with the lyrics: "my time to get your lovin'."

The filmmaker also uses anthropomorphic sound when manatees are feeding; munching noises accompany as they eat lettuce. Later, when one of them appears to be raising its pectoral fin to cover its mouth, we hear a muffed belching noise. The filmmakers apply these anthropomorphisms directly, for the sake of creating "humanity," and thereby, a *comic character*, per Vorhaus' definition.

THESIS FILM: COMEDIC TRIALS AND TRIBULATIONS

Background

I thought of myself as having "the chops" for doing a humorous thesis film, because of my life-long history as a recognized comedian. I found as a young child that I could successfully compete against my three older brothers for my parents' attention by being funny (and smarter than some of them). After spending my senior year in high school in a relatively high-visibility role, doing and saying wacky things in public—anywhere, anytime, for the sake of a laugh—I was voted "wittiest" by my peers. I have spent years of my life during which I've walked around with a cue card in my wallet, to remind me of all the jokes and funny stories I know how to tell. My intimate acquaintances know me for my performances of jazz standards (e.g., "Misty") in cat meows; in contrast, I find marches (such as Sousa's "Stars and Stripes Forever") are best done with chicken clucks. Humor is important to me, and I practice it as often as I can, because I immensely enjoy making people laugh; but also for the purposes of building bridges with people I want to know, for mitigating tensions, etc.

In my initial thesis film treatment, Attack of the Killer Lionfish, I attempted to integrate humor into the subject of invasion biology. With death and destruction being integral parts of the action and facts of the research effort, I felt the need to try to mood-manage my viewers' experience with quirky turns of phrase and facetious direct-addresses to sea creatures and viewers in the voice-over, along with sound effects, and

other techniques. While the dark themes of the topic might make humor seem "dangerously inventive," I'd had an experience that seemed to counter that concern. A reception line of 350 people, who came to pay their respects, preceded my father's funeral. Their initial expressions, as they gazed across the room at us, were those of being disturbed, because my siblings and I quickly ended up raucously laughing and joking with nearly everyone we greeted that night. (Dad would have wanted it that way.) So, if we could laugh in the face of that tragedy, humor was definitely "on the table" for the invasion topic; and I desired humor as a component of my final MFA product. (But all that was not enough.)

Humor in Headlines

The title of the film arose out of my laughing reaction to the sensational headlines that surround the topic of the lionfish's invasion in the Atlantic. The one headline that most provoked my amusement was from the New England Aquarium, whose press release read: "EXPEDITION FINDS VENEMOUS FISH IN WRONG OCEAN" (sic). After choking on the misspelling from an institution of their stature, I thought to myself, "Wait a minute—it's just a fish." Best I could determine, it was purely a tabloid-style attention-grabber. As I proceeded in my research of the topic, I found another headline that was hyperbolic and also simply incorrect, in a way that was destructive to the reader's accurate grasp of the overall threat. This Nassau Guardian headline read:

"Dangerous venom can be fatal at times," while there were no documented cases anywhere of human fatalities from the sting.

So I decided to incorporate the inflammatory, web-based publications that contained these and other headlines, to show their exaggerated, flawed comic aspects. One of my committee members provided feedback that these images made my film look "amateurish"; the committee member was certainly correct in that assessment. However, if I were to use more tasteful, stylized (and correctly-spelled) versions of the texts, they would lose much if not all of their comic effect.

Tone, Humor Timing and Placement Issues

I attempted to create a personal, conversational tone in the voice-over script, to convey my "respectful peer" relationship with my characters (whom I believe are doing the right thing by researching—and in some cases—culling the invader). I also needed to provide a detailed scientific overview of the biology of the invader and impacts of the invasion (in its historical development and current status), to convey to the viewer that, in the end, though not lethal to humans, the lionfish will probably have a very deleterious effect on the fisheries of the Bahamas and Bermuda (that could have been avoided). I preferred to use a casual, direct-address style in the narration, to avoid the stereotypical "Voice of God" style of mainstream documentaries. I *thought* that style would also provide me a good basis for interjecting humorous thoughts, and would help the narration stay active, so that there would be a good flow to it, avoiding long gaps of silence between a setup and a punchline.

The net effect of these combined requirements was, first of all, a huge amount of talking—way too much. Weaving the information, with the chatty style, in and out around my characters' remarks, there was someone talking, nearly incessantly, throughout the 25-minute film. That's not funny.

As I went through several drafts of the voice-over script, I found myself instinctively trying to reduce the total amount of narration. But I also felt a growing need to back off of any facetious tone in phrases that would be heard shortly before or after one of my characters spoke, to make sure that my humor wouldn't be interpreted by the viewer or my scientists as satirizing or questioning them, in any way. My attempt to be consistent in this approach inevitably created many awkward silences that did not help comic timing. And ultimately, the number of humorous opportunities diminished to the point where the film was not going to be funny frequently enough to feel cohesive.

Humor in Scene Intertitles

Another way in which I attempted to inject humor was by using movie titles to introduce, by suggestion, the content of the next segment. For example, "Heaven Can Wait" was the title of the scene in which two scientists tag and release lionfish underwater, instead of taking them up to be dissected. I felt that was a pretty funny title; others liked it as well. But the movie titles had to be from blockbusters, or some viewers might not know them. For the scene which introduces the fact that the Bahamian government has decided to cull the lionfish, the only big, recent title I could think of, for referring to death, was "Meet Joe Black." The young Bahamian scientist, who talks (a

couple of shots after the title) about their science efforts, is of African ancestry. No matter how positively I had portrayed this young man in earlier scenes, *somebody* in the viewing audience was not going to understand that title, and would therefore take exception to it. I also received feedback from another filmmaker (whom I would have expected to be familiar with the movie's themes); she let me know that she was distracted by the title, rather than assisted. Since the information that immediately followed the title—that the Bahamian government, out of frustration, has begun culling—was supposed to be an emotional peak in the story, I could not afford to lose my audience at that time, for the sake of a joke.

(In the analogous context of comedy writing, Vorhaus specifically describes the effect of the distraction that my titles caused. Using an example where a joke about Mahatma Gandhi pops up in the middle of an unrelated story, he warns of the effect on the reader [or in my case, the viewer]: "Your reader has to stop and remember everything he knows about Gandhi, . . . and then measure that information against the reference you've just made. Even if he gets the joke, you've broken up your narrative flow, . . . Unless the joke is a damned good one, you stand to lose more than you gain" [72].)

Hostile Humor

I used hostile humor a couple of times, in direct-address to sea creatures who were failing to eat the lionfish. To a moray eel, as it recoiled from the potential snack, I chided, "C'mon, ya big sissy . . ." then, because I felt badly about deriding him, I

followed up with a more softly intoned "I know: you didn't get to be that big or that old by being stupid, did you?" My cajoling of the animal was effectively an attempt to satirize him. The joke could work for an audience familiar with the moray as an awesome predator with bad eyesight, known for shredding lobsters, and tearing the thumb off of any human who tries to hand-feed it. After feedback from my committee members—at the time they recommended that I terminate this humorous film treatment—I was already planning to remove the moray satire all together, mostly because I wasn't comfortable with the hostility of it, toward such an innocent and venerable old beast.

One potential approach that might have made me comfortable with the satire is if I had used myself on-screen for some of these kinds of interjections, which would have allowed me to use Weisfeld's "play face," and convey my sympathy for the moray. (I am not fond of myself in front of the camera, but more importantly, the piece already had many characters to accommodate in a short period of time, so I chose not to burden the film by becoming another.)

Humor Through Metaphors

Another area of challenge was my effort to find a humorous, binding metaphor for the players and story. With this metaphor, I hoped to find various amusing nomenclature with which to refer to the subject animal and the research team, and to provide some theme for the scene titles, etc. I looked at such identities for the lionfish as the unwelcome immigrant, the criminal, the deadly virus, the cancer, etc. All of the

metaphors failed for some story elements or characters. A "Frankenstein's monster" identity for the lionfish put the Bahamian community in the regrettable position of being equated to the crazed townspeople. The worst outcome of all came from the identity of "enemy combatant," which would have afforded me some nice opportunities for jabs at the current administration's war efforts—off-topic, I agree—but certainly gratifying and potentially creating a strong bond with many viewers (á la Michael Moore). However, this metaphor ultimately aligned my scientists—who were capturing and dissecting the combatants—with the torturers at Abu Ghraib.

Comedic Failure: Root Cause

A useful benchmark of my comedic failure is that, when I previewed this cut to a woman who is a well-educated sixty-year-old, she only laughed once during the entire film (at the moray satire line, which I'd decided to remove), and simply felt that *everyone* should know about the invasion, and how it came about. In hindsight, her galvanized response told me all I should have needed to know.

My final analysis of the root cause of my failure to achieve comic brilliance in this film, though, is that (in the end) the lionfish population explosion turned out to be real. It's not just another fish, like I'd suspected; it probably will devastate native fisheries before humans or nature can fix the problem. This turned out to place the film in fundamental violation of Vorhaus' requirement for a happy ending, and of Gervais and Wilson's abstract definition of humor: "*nonserious* social incongruity" (399).

Comparing it to Toads, I think Lewis' piece worked because its subject animal is inherently funny-looking and familiar to us, and thus, unlike the lionfish in both respects. The film also failed because, to some degree, the crisis of the toad's invasion is water under the bridge (it began in the mid-1900s). With my film, the lionfish invasion is still developing, with island economies and ecosystems likely to incur substantial losses and damage imminently, or in the near future.

CONCLUSIONS

In this final chapter, I'll attempt to derive some general conditions for appropriate and successful uses of humor in SNH films (and conversely, outline those which are likely to be inappropriate or unsuccessful).

Subject and Content Considerations

For a humorous treatment to succeed, the subject and mission of your film should be compatible with humor. If your mission for the film is to create a portrait of a scientist, a technology, or an animal, this kind of objective seems to accommodate humor. Such a mission allows space and time for the humor. A film about a situation, rather than a particular animate subject, may also offer opportunities for mirth. (Lewis' Toad is essentially a film about a bad situation—the invasion—rather than one about the toads or the people themselves.) On the other hand, if conveying an urgent situation or calling the viewer to action is the purpose of the film, humor will probably work against those goals, and might also have the inadvertent effect of satirizing your characters.

Genuine, "diegetic" humor from on-screen characters will likely succeed, because it's often accompanied by the play face, and other characters laughing, both of which make the humor work. In the realm of natural history, an animal that is whimsical or outlandish in appearance can be a source of humor. Equally important for any character (animal or human) is that they are—or quickly become—familiar. This is comparable to Vorhaus' requirement for "humanity" among comic characters. If the audience does not

have a concept of the character to work from, the viewer has no basis for comic perspectives in regard to, or from, that character. In this vein, visual metaphors are a potential source of familiarity (and hence, comic messages) to your viewer. Another comic opportunity that the familiar subject opens up, especially in the case of an animal, is that of satire (as Mark Lewis' Toad amply demonstrates).

Natural sounds from animals often are funny—arising from their strangeness—and can be made even more so by brief absences of images that reveal their source. Sounds may also be used as metaphors, to humorous effect. For example, in underwater film, I can sometimes also identify human-generated, common sounds that are supportive of the action, that I can use as special effects. For instance, if my humorous treatment of the lionfish issue had worked out, I planned to use the resonant sound of a metal door slamming, over footage of the nets clamping shut around the fish. As another example, I could accompany fast-swimming animals with the sounds of jets flying by, or cars zooming past. If I've captured an event or process in which an interesting or funny sound takes place, I can consider using it as a recurring motif, to provide humorous breathing space in my film. (By the same token, visual riffing on an action also could be quite effective.) And finally, I can look for, or have a composer create, music that carries humor, by composition, instrumentation, or lyrics.

Timing Considerations

In cases where the subject and goal of the film can support humor, graphical and animated characters and symbols can support humorous commentary; using these visual elements in place of real-life subjects allows me to keep from implying or showing direct disrespect to any particular individual. As a corollary, I can show serious characters—and the critical information they provide—my respect, by giving them time and space. The results of the Kaplan study—that people who saw humorous treatments performed least well on retaining the other serious content (3)—provides ample motivation for minimizing humor around your subject's important points (though if the subject can make her point humorously, it may well reinforce the audience's retention of the information).

Using humor to accompany a sequence in which natural or scientific processes need time to play out can be problematic, because comic timing could be difficult to achieve. Ellipsis editing may offer some level of control over the length and timing of such a process, but might have the undesirable effect of degrading your audience's critical understanding of the true nature of the process.

Contiguous humor may work better than fast-paced, interspersed humor, for the purposes of both respecting your characters and their information, and for supporting your viewer's learning process. One could consider a structure with a humorous opening segment (serving as a hook), followed by the necessary background information for the

topic. Then subsequent, relatively isolated blocks of humor could reinvigorate the viewers' attention and enthusiasm.

Considerations of Form

Certain forms of documentary seem to accommodate humor. For example, poetic films allow the kinds of repetition of content that can have a humorous effect. Such films also tend to eschew informational narration, so there is less chance of distracting the audience from anything critical, by inserting humor. The filmmaker can also control pace through the editing process (to some extent), and so better optimize comic timing.

Performative films offer great opportunities for any filmmaker who is comfortable in front of the camera. By being a on-screen character, one has all the visual cues of body language and the play face contributing to the audience's "getting it." (Graphical elements can also serve as a filmmaker's proxy, effectively performing for the filmmaker.)

(Not coincidentally, upon reexaming Rosenthal's list of successful uses of humor in documentaries (69-73), as well as my own list, I found that the preponderance of SNH examples were either performative, poetic, or both.)

Parody of other genres may also offer a relatively untapped formal approach.

Audience Considerations

Knowing the demographic of an adult SNH film's eventual distribution can assist decisions about humor, particularly hostile humor. Given the strong gender differences in responses to hostile humor, with women generally avoiding it, and men wanting it, filmmakers have a real problem in trying to use humor in a piece headed for a general audience. In a piece destined for the Science Channel, one might safely assume a predominance of male viewers, but that is less and less the case (Hahm 2004). Within the Science Channel's audience, a mitigating factor for the gender difference may exist. Because historically, males—and therefore hostile humor—have dominated the science culture, women in science may, through exposure, have simply become desensitized to it. Some women have come to enjoy it, as I have.

For a general audience, though, we must understand that hostile humor (and more generally, a polemical stance) is a high-risk tactic. To the extent that there is always a victim or out-group, a filmmaker stands to alienate—to lose—some portion of her audience. So if ratings matter, the constituency targeted by hostile humor should be small (or oblivious to the jab), or one should be certain of generating enough in-group solidarity to effectively compensate for the loss.

(There is a narrow case where hostile humor might be harmless and relatively well received by an audience: in reenactments or reconstructions. In such a situation, an actor can be the source or the butt of the hostility. A case in point is the somewhat

unflattering performance of my friend in the Attack reenactment, where she, as the indignant woman in the elevator, rebukes toward the camera, "You guys smell like fish!")

Just Because You Can, Doesn't Mean That You Should

In closing, as I have synthesized all the evidence, humor has limited constructive use in SNH films. The history of science films is replete with stories of people facing challenges in pursuit of a better life for humankind (or ways to destroy it). Similarly, nature films most often tell the stories of drama and beauty, of life and death. The lack of humor in these bodies of work is a reflection of these factors, as well as of the communication constraints resulting from scientific specialization.

If humor is a filmmaker's highest priority, feature films will make for a more fertile field of engagement.

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