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LARGE FORMAT AND MEDIATION OF THE NATURAL WORLD:
VISION, TECHNOLOGY AND THE SUBLIME

by

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ABSTRACT OF THE DISSERTATION

Large Format and Mediation of the Natural World:

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Large format films, specifically those associated with science centers, museums and historical sites, offer a visual experience that engages the viewer through an immersive, engaging response to the large images. Commonly referenced as IMAX® films, these films come closest to the total cinema posited by Bazin which would offer a complete representation of the world. The strict display requirement for these films has resulted in their association with institutional venues and implicates them in the dissemination of ideology and cultural knowledges. Through a multimethod critical cultural analysis of production (political economy), text (close reading combining a textual and shot by shot analyses), and audience response (content analysis) to the large format film *Yellowstone*, the research presented here asked, “How are nature, Yellowstone National Park, and the National Park System represented in this large format film?”, “Where does the large format presentation of nature and the national parks fall in the continuum of representations of nature?”, and “How are nature, the Yellowstone National Park, and the National Park System presented and

“constructed” in large format in consequence of the medium itself and through the medium’s relationship as a “truth” format aligned with museums, science centers and historical sites? Analyzed through a consideration of the theories of ideology and the sublime, research pointed to the complicated relationship between director and funders in the construction of the film, with choices for content being driven by economic concerns for the public’s response to the film. The film was shown to reflect the ideology of pristine America linked to the myths of Western expansion through its depiction of the myth of archetypal America. Due to the technological limitations of the medium which created a sublime experience, the viewer was positioned within an ideological space as separate and apart from nature, of knowing but not experiencing, of seeing but never fully understanding the natural world. By celebrating the power to dominate nature in the elimination of the connection to nature, *Yellowstone* represents an extension of the American technological sublime.

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Dedication

It is my hope that with this dissertation I have made my parents Louis and Dorothy Nucci proud. I only wish they were here to share this with me, as they are the guides by which I live my life.

Thank you to my brothers and sisters Carol, Helen, Lou and Greg for being my role models and giving me something to strive for. You have made it so easy to be the youngest sister.

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Chapter 1.

Introduction: Mediating the Natural World in Large Format Films

The question as to how “mediation” or the imposition of mass media between ourselves and reality, impacts perception and the generation of meaning is a key issue for media studies, especially as the media are increasingly coming to stand between humans and the “real” world. Douglas Kellner (2002, 9) commented: “The media are a profound and often misperceived source of cultural pedagogy: They contribute to educating us how to behave and what to think, feel, believe, fear and desire—and what not to.” Media texts--whether words, images or music--are not mirrors which reflect without distortion. Rather, they are creations of culturally-embedded humans who create these texts through their own perceptions of the world. In this way, the media play an important role in disseminating ideological and cultural perceptions of the world.

Media visual images specifically are key to meaning-making given the centrality of vision to contemporary Western societies (Jenks, 1995; Mirzoeff, 1999; Ramplay, 2005; Virilio, 1994), and the fact that, as noted above, images are not neutral representations of the world. Images are the outcome of a “complex interplay between visibility, apparatus, institutions, bodies and figurality” (Mitchell, 1994, 16) where vision is inseparable from the historically created observer, who is a site of practices, techniques, institutions and processes of subjectification (Crary, 1990). Roland Barthes noted that the image itself is polysemic in nature, and offered possibilities for meaning; the specific semantic outcome is dependent on its placement in particular discourse systems

(Sekula, 1984). Images have both a literal, or denotative meaning; as well as the possibility for multiple symbolic, or connotative meanings as interpreted through specific historical and cultural contexts. Barthes described these second-order meanings as “myth” (Barthes & Lavers, 1972), whereby ideological concepts are evoked by a certain sign corresponding to a cultural concept, worldview or placement within particular discourse systems (Chandler, 2002; Fiske, 1990; Reynolds, 2000). The process of visual communication is therefore best understood as an interaction “between the viewer and the viewed, between the power of the image to signify and the viewer’s capacity to understand meaning” (Evans & Hall, 1999, 4). Reality is thus constituted through what images represent, how they represent, as well as what they do not represent. These omissions or silences in images are as important as what is included, as the erasure of conflict in English pastoral art as discussed by Raymond Williams in *The Country and the City* (1972) and John Berger in *Ways of Seeing* (1972) makes clear. Pierre Macherey (1978) described these silences as internal distanciations or gaps between what a text wants to say and actually says (Storey, 1993); it is at these gaps that the text’s relationship to its historical and ideological conditions are revealed and where “[w]e always eventually find, at the edge of the text, the language of ideology, momentarily hidden, but eloquent by its very absence” (Macherey, 1978, 60).

Given that “the concept of imagery...reenacts the ancient struggles of iconoclasm, idolatry and fetishism” (Mitchell, 1986, 4), visual communication is strongly linked to ideology. This is especially true for films as their apparent

realism is strengthened by the rhetorical codes and conventions generated by choice of subject, point of view, and editing, a cinematic deception that Allen (1995, 7) notes is the same as “wrought by ideology upon the individual.” These aesthetic choices play an important role when power is at stake, and can be used to make “rhetorical appeals to both gain the consent of others” and conceal the operations of power (Ramplay, 2005, 139).

Perceptions of the natural world in particular are strongly influenced by media representations, and “the mass-produced, popular culture version of nature is a major source of imagery and information shaping public understandings of environmental and scientific questions” (Davis, 1997, 10) which generates very real material effects that influence our understanding of nature and the natural world (Baldwin, 2003; Davis, 1997).

Images of nature, in particular, have played a large role in driving public perceptions of the natural world, because photography was from its beginning used to chronicle nature (Gibson, 2006). The industrialization of society both accelerated communication and increased the public’s access to cameras and film (Osborne, 2000) which contributed to the construction of an aesthetic of natural images. This democratization of the image, reflected through the anti-elitist practices of photography (Sontag, 1972) helped to frame perceptions of landscapes not yet visited (Szerszynski, 2005) and a sense of places which were:

chosen to be gazed upon because there is an anticipation.... Such anticipation is constructed and sustained through a variety of non-tourist practices, such as film, TV, literature, magazines, records and videos, which construct and reinforce that gaze...the viewing of tourist sites often

involves different forms of social patterning, with a much greater sensitivity to visual elements of landscape or townscape than is normally found in everyday life. People linger over such gaze which is then visually objectified or captured through photographs, postcards, films, models and so on. These enable the gaze to be endlessly reproduced and recaptured (Urry, 1990, 3)

As a result “the material landscape was mediated by a process of cultural appropriation, and the history of its creation was subsumed by visual consumption” (Zukin, 1991).

In the United States today, the consistent and pervasive decline in nature-based recreation (such as visiting parks, camping, hiking, and other outdoor activities; Pergams & Zaradic, 2008), and its replacement with video games, Internet, and media interactions has resulted in the media becoming even more responsible for perceptions and understanding of the natural world. Derek Bouse (2000) and Colin Turnbull (1981) both point to issues with knowledge of the natural world being based primarily on images of nature, rather than direct experience (and also if the direct experience is through zoos or aquaria where the animals are presented in a controlled, managed space). They note that confusion regarding acceptable distances from wildlife has led to tragic consequences for both the unwitting human and the wild animal which is often killed to prevent possible future attacks on humans. “It is safe to bet that television and movies [play] a part in the high expectations we have for close encounters, active participation with nature, and escape” (Corbett, 2006, 136-7). At issue is the concern that the ways that people understand nature can affect how they act upon the physical environment (Olwig, 1996), how they value

nature in their daily lives (Kareiva, 2008), and how they solve environmental problems (Greene, 2005).

By virtue of their potential to reach large audiences, films about nature such as *March of the Penguins* (2005) and *An Inconvenient Truth* (2006) play an important role in cultural perceptions of nature. Some might argue that such films have little or no ideological value given that they are considered objective nonfiction films and not documentary films, which require a definable ideological position (Nichols, 2001). However, nature films are narrative constructions created by filmmakers' choices and constructions that communicate "overt and covert ideologies, as [is] the case with all classic documentary forms" (Horak, 2006, 459). For as soon as nature is represented technologically through film, a step is taken from nature to culture (Ganetz, 2004).

Only a few of these films do not support the dominant social paradigm, which is that humanity is superior to the rest of creation and is "necessary to save, manage or study the natural world" (Corbett, 2006, 134). Films about nature are understood to be sites of "purposeful ideological work" where beliefs about nature are normalized as "common sense" (Chris, 2006, 462) or as an adaptation to prevailing "moral and ideological positions" (Ganetz, 2004, 200). These films, though on a primary level narratives about nature, are in fact, narratives about culture (ibid, 202).

The large format medium

Research discussed in the edited volume *The Psychology of Entertainment Media* (Shrum, 2004) points to the influence of entertainment media on responses to real-world events, noting that the memories of mediated experiences impact not only the interpretation of information but also subsequent judgments and decision making. Media have the power to change what we think and how we respond.

[I]n the most profound, socially pervasive, and yet personal way, these objective encounters transform us as subjects. That is, although relatively novel as 'materialities' of human communication, cinematic and electronic media have not only historically *symbolized* but also historically *constituted* a radical alteration of the forms of our culture's previous temporal and spatial consciousness and of our bodily sense of existential 'presence' to the world, to ourselves, and to others (Sobchack, 2000, 137).

As a specific form of visual communication, large format films are a particularly emphatic form of visual communication. Generally known by the viewing public as IMAX®¹ films, not all large format films are IMAX, which references a patented projection system and a film size of 15 perforations/70 mm millimeters. Film formats can be defined by the number of perforations or sprocket holes located in the film stock that are used to move the film through the projector, and the width in millimeters of the film frame. Within consistent camera systems, the larger the number of millimeters, the larger the size of the film frame. So a 35 mm film frame would be half as wide as a 70 mm film frame.

Large format is an extension of the 1950's widescreen technologies Cinerama, CinemaScope, and other formats which introduced the idea of active

¹ For this research, the phrase large format was considered equivalent to the more-familiar (for the public) phrase IMAX.

spectatorship (Belton, 1992) through an affective engagement with the immersive widescreen image and multitrack stereo sound. With their technological capability of mimicking the human field of vision, large format films come closest to the “total” cinema posited by Bazin (2005, 20) which was “a total and complete representation of reality [...] a perfect illusion of the outside world in sound, color and relief.”

For Bazin, the films that came closest to this ideal included two characteristic shot treatments: 1. composition by deep focus², and 2. extended shot length³, both of which are essential characteristics of the large format medium. Combined with their almost complete coverage of the human field of vision in the theater setting which can include both dome and flat screens, the large format experience is associated with a feeling of being included in the visual imagery as part of the screen image (Flagg, 1999), representing a new kind of spectator engagement with the screen.

Large format films “define the cinematic experience not as a pure visual relationship to a screen but as the pleasurable, physical self-awareness of coordinated perceptions within an architectonic space” (Rabinovitz, 2004, 102), instantiating the apparatus through a fusion/confusion of camera, projection system and auditorium (Virilio, 1990). Paul Virilio defined this as “cataract surgery” (ibid, 169) where vision collapses into the filmic and architectural space of the theater. But given the sense that large format physically immerses the

² In deep focus, elements at different depths of the image are all in focus.

³ The term extended shot length describes a single take that lasts longer than the typical shot in a given historical period. David Bordwell (2006) found that average shot length in feature Hollywood films has declined from 8-11 seconds before 1960 to 4-6 seconds today.

spectator within the film (Recuber, 2007) it has also been defined as “somatic surgery” in that the experience of large format is a total body experience. It may be vision that drives the response to the film, but it is the entire body that reacts to the film and the theater space: “once the lights go down and the movie begins the architecture of the building becomes that of the space/film/body” (Nucci, 2008, unpaginated). The large format film director Ben Shedd (1989) described it by saying that viewers were not watching a film but were instead *participating* in that film. For large format, “the filmic experience has moved from passive, from being held in a frame, to active, to becoming the engulfing reality with the audience present in the filmic events.” In these films, this illusion of being there becomes

more important than the films themselves; the filmic representation is less central than the effort to create the sensation that the screen has disappeared, that is it truly a window, and that the spectator sits right in the image (Acland, 1998, 290).

Large format technology has been described as being able to transform images into sites of cultural engagement (Wasson, 2007). Historically, the linkage of large format films to the spectacle of technological development through world’s fair exhibitions. The first showing of IMAX technology occurred in Expo ’70 in Osaka, Japan which grew out of a multiscreen experiment at Montreal’s Expo ’67. The consequent promotion of national identity “through their inherent ability to convey certain kinds of subject matter” (Belton, 1992, 88); and the strict display requirements for these films through specialized theaters and display equipment associated with educational and historical venues (such

as museums, science centers and cultural sites), implicates these films in the dissemination of ideology and cultural knowledge⁴.

In large format, “the quest for audiences in order to recoup capital investment has meant that achieving the real has tended to privilege the more real than real, the ‘realistic’” (Hayward & Wollen, 1993). Therefore, the all-engulfing, panoramic images of large format are “ideologically linked to the reinstatement of certain forms of epistemological power (Acland, 1998, 434), and have become “simultaneously identified with both realism and spectacle” (Recuber, 2007, 317). Discussing the large format theater near Zion National Park, socio-cultural geographer Leo Zonn (1990, 2) commented that “The [large format] theatre provides a distinct and carefully contrived image of a certain place. While the specificity of place, medium, and image is somewhat unique in this case, the process of place portrayal is not.”

As a medium with inherent characteristics for audience engagement through embodied spectatorship, large format films “makes vision coherent by asserting its certitude in relationship to one’s bodily experience of multiple sensations” (Rabinovitz, 2004, 121). Combined with the realism achieved through both technologically-achieved intensity (Recuber, 2007) and institutional association, large format films are imbued with a sense of accuracy. These films “are so good at replicating the sense of real travel while transcending it with a fantasy of spatial mastery that they have become the ideal tourist simulation” (ibid, 114). This is even the case for astronauts from the US space program.

⁴ The Cinerama technology, a forerunner of large format, was described in certain instances as “an overt agent of ideology” (Belton, 1992, 89).

After viewing the large format film *Destiny in Space* (1994), several astronauts said it changed their sense of their time in space: “in many respects it was actually better [than reality], because they didn’t have the restricted view of being in their helmet” and that the large format film was “replacing their own real memories of what it had been like in space” (ibid, 114).

Representation in large format

Just adjacent to the west entrance to Yellowstone National Park in West Yellowstone, Montana stands the Yellowstone IMAX Theatre. There, during multiple showings daily, visitors to the park can get their first experience of Yellowstone by watching the large format film, *Yellowstone* (1994). The theater website promises the viewer:

Until you’ve been to Yellowstone IMAX Theatre, you haven’t had the complete Yellowstone experience. Immerse yourself in the breathtaking scenery, majestic wildlife, and vivid color and sound of Yellowstone, the IMAX experience. (Yellowstone IMAX Theatre, 2009).

When considering the role of large format films in meaning-making, what is unique about this film as an example of a genre of large format films about the national parks⁵ is that they mediate an experience which is easily available to the viewer. The theaters that show these films are located just outside the invisible boundary lines that demarcate the untrammelled “nature” of the parks from “civilization” in the theater/hotel/shopping areas found just outside the national park borders. Like the similar venues found at Grand Canyon National Park,

⁵ Other national park large format films include *Grand Canyon: The Hidden Secrets* (1985), *Treasure of the Gods: Zion Canyon* (2005); and *Niagara: Miracles, Myths and Magic* (1987). All these films were directed by Kieth Merrill and produced by Destination Cinemas Inc.

Zion National Park and Niagara Falls National Heritage area, eponymous large format films present a perfect view of the park's natural world, while their "cinema[s] of transportation" (Acland, 1998, 437) provide virtual tourism to both accessible and inaccessible sites (as these films show areas of the parks that are restricted, difficult to visit or seasonal in experience) as the perfect experience (as the films open up the parks without the issues associated with travel, weather, etc.). Compared to other large format films which "take you to places you've never been before" such as space (*Hubble 3D*, 2010), deep sea (*Volcanoes of the Deep Sea*, 2003), micro worlds (*Bugs!*, 2003) and impossible environments (*Solarmax*, 2000), this genre of films images in large format places that are known historical and cultural venues that can be experienced directly.

The research presented here examines how the highly engaging, experiential nature of large format blurs the line between the reality of the national park visit versus the enhanced "reality" of the representation of Yellowstone National Park in the large format film, *Yellowstone*. I discuss the impact of this format on meaning-making, and address the role that the large format medium with its "heightened, and intensified relations between the body and the machine, and the cinematic rhetoric of hyperrealism" (Rabinovitz, 2004, 102) plays in the creation of meaning about nature and the Yellowstone National Park, given that the national parks "are deeply humanized landscapes, endowed with meanings beyond those associated solely with their value as ecosystems" (Meyer, 1996, 6).

Examining this film, its production and the audience response to the film offers the opportunity to consider the role and impact of this unique filmic format in meaning-making, and to speculate whether the medium itself impacts the viewer's perceptions of nature, the Yellowstone National Park, and the National Park System. I ask the following questions:

How are nature, Yellowstone National Park, and the National Park System represented in this large format film?

Where does the large format presentation of nature and the national parks fall in the continuum of representations of nature?

How are nature, the Yellowstone National Park, and the National Park System presented and "constructed" in large format in consequence of the medium itself and through the medium's relationship as a "truth" format aligned with museums, science centers and historical sites?

Through a multimethod critical cultural analysis of production, text, and audience response to the film, the research presented here will locate large format historically in the visual display of nature and the National Park System and discuss how large format links with the technological/American sublime (Nye, 1994). A discussion of institutional alliances--specifically examining the impact of funding sources and display venues on content; author intent, and audience response--will describe the extent to which large format films can be seen as purveyors of ideological discourse. The results of this study will add to existing literatures on the technological and American sublime, representations of nature, the nature film and the role/impact of technology in communication.

A question of representation: Linking ideology and the sublime

A cultural studies approach decenters the text (Aiello, 2006) in analysis as acknowledgement that texts are part of a broader circuit of culture (Lister & Wells, 2001). As the processes of production and consumption are themselves both sites of power struggles and sites of signification in which “the process of making meanings intrinsically excludes other meanings, and the social conventions that enable the sharing of meanings are themselves ideologically framed” (Hopkins, 1994, 58), analysis of a text considers not only the properties of the text, but also the “entire discursive formation to which a text...belongs” (Hall, 1997a, 51). These power relations, or ideologies, are systems of meaning through which cultural practices are naturalized. In this way culture is defined as the shared meanings experienced in daily life which in themselves are created from the production, circulation, and consumption of meanings from “texts” encountered daily (Storey, 2003). Fundamental to cultural studies is the assumption that reality is a result of how things are signified not only in language but in practice (Hall, 1982). As cultural texts are produced within specific historical and social systems and embody and enact particular beliefs and ideas they have a constitutive role in power relations (Lister & Wells, 2001; White, 1992).

The field of cultural studies can be understood not as a discrete discipline, but rather as an interdisciplinary field in which there is no prescribed set of theories or methods (Rose, 2001). As such it draws upon such diverse fields as anthropology, political economics, literary criticism, and feminist studies for both

theoretical frameworks and methodology in order to address specific questions about the interactions between texts, spectators, institutions, and culture (O'Donnell, 2005; Stam, 2000). Cultural studies seeks to answer questions about "the study of the forms and practices of culture (not only its texts and artifacts), their relationship to social groups and the power relations between these groups as they are constructed and mediated by forms of culture" (Lister & Wells, 2001, 431). Underpinning this critical cultural analysis of the large format film *Yellowstone* is a theoretical framework that understands that the processes of constructing, sharing and consuming texts are complex, both material and cultural, and make sense of an image through complicated and potentially contradictory codes of signification (Rose, 1996). Using a cultural studies approach in order to address questions of representation of nature and the National Park System the results presented here will consider meaning making in the film *Yellowstone* at the intersection of the Althusserian theory of ideology and the sublime. Large format, through its immersive aesthetic, can be seen as an example of the extreme experience, simultaneous wonder, astonishment, and fear of the classic sublime (Wasson, 2007; Whitney, 2005), and that sublime representations, like ideology, positions the viewer with respect to specific social, political or ethical issues (Oravec, 1996).

Ideology. The concept of ideology is key to critical cultural studies as it points to the struggles between the powerful and the powerless for identity and voice. Cultural texts are ideological in how they implicitly or explicitly (Storey, 2003) produce particular knowledges and positions for their users, which then

link the viewers to economic and class interests of the producing and distributing institutions through the expression and embodiment of particular values, beliefs and ideas (White,1992). Ideological theory looks to understand how the

forms of consciousness generated by the lived experience of subordinate classes and social groups facilitate the reproduction of existing social relations and thus impede such classes and social groups from developing forms of consciousness that reveal the nature of their subordination (Purvis & Hunt, 2009, 478).

Under classical Marxism, ideology reflects the power relations of the base/superstructure in ways that do not involve force or coercion (Stam, 2000). Louis Althusser rejected Marx's mechanistic interpretation of the superstructure as a passive reflection of the base by theorizing ideology not only as beliefs and ideas but also as material practices encountered in everyday life, such as rituals and customs which connect people to the social order (Storey, 2006). Defining ideologies as systems of representation (images, myths, ideas concepts), Althusser (1990) pointed to the role of representation in the development of culture and the production of meaning, opening ideological theory to the role of language and discourse in the articulation of ideology (Hall, 1983).

According to Althusser, the relationship between the economic, the political and the ideological was not a simple one. Rather, it was perceived as a complex structure which could not be interpreted by "simply reading off the different levels of social contradiction at different levels of social practice in terms of one governing principle of social and economic organization" (Hall, 1985, 92). Following Althusser, the superstructure is not dependent on the base, but instead is both relatively autonomous and also exercises influence on the base (Strinati,

1995). As such, Althusser pointed to the lack of any guarantee that “the ideology of a class is already and unequivocally given in or corresponds to the position which that class holds in the economic relations of capitalist production” (i.e., class reductionism) (Hall, 1985, 94). Rather, Althusser posited that ideologies (or knowledge) were produced as the result of specific practices, or ideological work. Through the practices of everyday life the beliefs of the dominant class in capitalist social formations cultivate a population which is subordinated to the logic of the dominant system, creating a framework for society which is reproduced through social relations. Promulgated through ideological state apparatuses (ISA)—religion, schools, politics, family, media—the individual is interpellated as a subject within specific ideologies, which in themselves were the frameworks for thinking and understanding the world and the individual’s place (see Hall, 1985; Storey, 2006; Strinati, 1995). It is these institutions that define and give meaning to the experience of the world (Denzin, 1992).

Popular culture, especially film and media, are understood as an important locus for the articulation of ideological struggle (Hall, 1992, 1996) through the concept of representation, as their principle objective is to produce ideological representations. Composed of “concepts, ideas, myths or images” (Hall, 1985, 103), representation provides the systems of meaning through which the world is represented to ourselves and one another, and acknowledges that “ideological knowledge is the result of specific practices” (ibid, 103). Representation serves to construct individuals as subjects and contributes to the production of identity through both social relations and systems of production and consumption.

However, representational systems are not singular. Within the social formation, there are plural systems of representation, which interact in a complex interplay of different ideologies and formations (Hall, 1985). Through compromise equilibrium (Gramsci, 1971) there is a dialectical interplay between agency and structure, between the making of culture and the ways in which culture creates and reproduces hegemony. Texts created out of this interplay must be considered through the preferred meanings that are imposed on texts (Hall, 1997a), their consumption in a particular social context as a result of particular material conditions of production, as well as through the possible range of meanings that can be produced from that text (Hall, 1980; Morley, 1980). Ideological power is the ability to signify events in certain ways (Hall, 1982), the site of negotiation over competing meanings, and “the very system of representation itself and the commonsense principles that endow the system with meaning for those who participate in it” (White, 1992, 170).

Cultural studies does not insist on a monolithic reading for a text but rather understands that texts are multiaccentual (Volosinov, 1973) and polysemic (Hall, 1982). Meanings are encoded in production with a preferred meaning (Hall, 1997), but can be decoded in different ways by different audiences⁶ (Hall, 1980). Shaun Moores (1993,16) noted that “while recognizing the text’s construction of subject positions, [encoding-decoding] pointed to readers as the possessors of cultural knowledges and competences that have been acquired in previous social experiences and which are drawn on in the act of interpretation.” Readings of texts can be dominant, oppositional, or negotiated--the reader can appropriate

⁶ However, this does not imply an infinite number of meanings (See Condit,1989).

the preferred meaning, a meaning that is in direct opposition, or resist elements of the preferred meaning—and are based on the specific social and cultural knowledge of the reader (Hall, 1997b). Meanings understood from texts are thus constructed in and through culture, and as such, are contextual, contingent and open to the changing relations of power (Storey, 2003), and as such can yield complex and unexpected results (Ang, 1985; Jensen, 1986; Katz & Liebes, 1984, Morley, 1980; Radway, 1984).

Visual images have been singled out for their ideological impact, “because the systems of visual recognition on which they depend are so widely available in any culture that they appear to involve no intervention of coding, selection or arrangement” (Hall, 1982, 76). In this way, they are linked to the classical materialist definitions of how ideology functions. Film theorists in particular borrowed heavily from Althusser in thinking about how films promote and disseminate ideology as the realism of the filmic image served to disseminate ideological discourse in ways that ranged from the politically complicit to the subversive (Comolli & Narboni, 1971).

Films can be defined as ideological as they “both transmit and produce meanings, which are activated by the ‘other scene’ of history, economy and ideology” (Spellerberg, 1977, 282). They can express ideology, reflect ideology, discuss ideology, and transmit ideology as subconscious or cinematic experience because of the inherent technological specificity of the medium (Sunnemark, 2007). In the classic work, “Ideological effects of the basic cinematographic apparatus,” Jean-Louis Baudry (1974) argued that the ideological nature of films

in particular was a function of the cinematographic specificity of films themselves, an “institutional arrangement of interlocking principles, components and functions that create the pleasures of spectatorship associated with the viewing of a film” (Recuber, 2007). The apparatus included the mode of capture (filming, types of shots, lens length, framing), construction of the film (editing, montage), film projection (theater, screen, screen size), and the mental or psychological experience watching the film engendered in the spectator, where the “cinema can thus appear as a sort of psychic apparatus of substitution, corresponding to the model defined by the dominant ideology” (Baudry, 1974, 46).

For Andre Bazin (2005) and Jean-Louis Comolli (1971,1972/1986), the ideological nature of film was strongly aligned with the idea of deep focus “because it embodies the codes of perspective” (Spellerberg, 1977, 293). Bazin (2005, 35) noted that,

Depth of focus brings the spectator into a relation with the image closer to that which he enjoys with reality. Therefore it is correct to say that, independently of the contents of the image, its structure is more realistic.

The spectator was not in the image but a necessary part of the image. As such, the spectator recognized the images as real space, making them both the effect and creator of ideology, which was key to Althusser’s notion of ideology. As Serge Daney (1970) postulated, “from the ‘real’ to the visual and from the visual to its reproduction on film, the same truth is reflected infinitely and without any distortion or loss.” In effect then, the spectator understands the images as the same as reality (Spellerberg, 1977).

Sublime. The concept of the sublime, like that of the concept of nature discussed in the following chapter, is historically specific (Donougho, 2000) but and has evolved over time. From the eighteenth through the early twentieth century in both Europe and America, the concept of the sublime served to establish a “set form of language and pictorial elements for describing nature” (Oravec, 1996, 58). It also “encouraged a specific pattern of responses to nature that influenced the ways we look at and alter natural scenery” (ibid, 58). The ideology of the sublime became a tool to evoke specific emotional responses to nature (Cronon, 1985), shape the human response to the environment (Oravec, 1996) and in consequence, establish specific preferences for how nature was viewed and managed. It is argued that the sublime led to the idealization (Cronon, 1985), commodification (Masteller, 1981) and consumption of nature (McKinsey, 1985; Oravec, 1996); ultimately authorizing a policy of environmental devastation (Pease, 1986).

The earliest writings on the theory of the sublime by Longinus in the first century linked the term to lofty or elevated rhetoric that was capable of transporting (ekstasis) or overcoming the reader or audience. "Great writing does not persuade; it takes the reader out of himself [...] [T]o be convinced is usually within our control whereas amazement is the result of an irresistible force beyond the control of any audience" (Longinus, 1991, 4). To call something sublime was to reference a literal or metaphorical height, “especially the heavenly, noble or heroic” (White, undated).

In the seventeenth century, following the translation of Longinus into French and English, the concept of the sublime began to be applied to the visual as well as the rhetorical. As addressed by Edmund Burke in *A Philosophical Inquiry into the Origin of Our Ideas of the Sublime and Beautiful* (1756/2008), sublimity was recognized as an aesthetic concept that was both distinct from beauty and linked to the response to nature. Burke believed that the natural world was central to the experience of the sublime, describing sublime experiences primarily through natural imagery: “it comes upon us in the gloomy forest, in the howling wilderness, in the form of the lion, the tiger, the panther, or rhinoceros” (Burke, 1756/2008, 66). According to Burke, characteristics of objects that could arouse sublime feelings included such features as color, light, sound, obscurity, silence, darkness, vastness, depth, and magnificence to which all humans would respond in predictable ways (McKinsey, 1985; Nye, 1994). For Burke, the terror or horror of an encounter with the natural sublime was the result of awe and not dread. Above all, the sublime conveyed a sense of astonishment:

The passion caused by the great and sublime in nature, when those causes operate most powerfully, is astonishment; and astonishment is that state of the soul, in which all its motions are suspended, with some degree of horror. In this case the mind is so entirely filled with its object, that it cannot entertain any other, nor by consequence reason on that object which employs it. Hence arises the great power of the sublime, that, far from being produced by them, it anticipates our reasonings, and hurries us on by an irresistible force. Astonishment, as I have said, is the effect of the sublime in its highest degree; the inferior effects are admiration, reverence, and respect (Burke, 1756/2008, 57).

Writing after Burke, Immanuel Kant in *Observations on the Feeling of the Beautiful and the Sublime* (1764/2007)⁷ stripped the psychological aspects from the concept of the sublime, and linked it to a transcendental experience that affirmed human autonomy and moral worth (Szerszynski, 2005). Kant theorized the sublime as a moral or transcendent experience where the ability to reason was challenged by responses to the natural world, including,

Bold, overhanging, and as it were threatening, rocks; clouds piled up in the sky, moving with lightning flashes and thunder peals; volcanoes in all their violence of destruction; hurricanes with their track of devastation; the boundless ocean in a state of tumult; the lofty waterfall of a mighty river, and such like (Kant, 1764/2007, 91).

To Kant, the sublime in nature was linked to a moral response (Oravec, 1996). Dividing the sublime into the mathematical and the dynamic, which respectively represented an encounter with vastness or magnitude, and scenes that could arouse terror, each type of sublime experience would lead the observer to recognize their rational superiority to nature and give them “the courage to measure [themselves] against the seeming omnipotence of nature” (Kant, 1764/2007, 91).

Regardless of their differences in defining the sublime, both theorists understood that to experience the sublime was to have a disorienting or overwhelming encounter with a more powerful non-human world (Hitt, 1999). Sublime landscapes, commonly depicted through realistic pastoral landscapes portraying scenes of “benign domestication” (Oravec, 1996, 62), were places

⁷ Christopher Hitt (1999, 609-610) describes *A Philosophical Inquiry into the Origin of Our Ideas of the Sublime and Beautiful* and *Observations on the Feeling of the Beautiful and the Sublime* as “among the cultural artifacts that helped define and refine a tradition of the sublime which still has relevance today.”

where one had a chance to encounter God (Cronon, 1985). To experience the sublime was to experience a mix of terror, pleasure and fear, offering “simultaneously astonishment and admiration, wonder and pain” (Wasson, 2007, 85). For the viewers reminded of their own limitations, the sublime was a “question not of the subject's increasing self-awareness but of the subject's sense of limitation and of the ultimate value of that experience within a social and ethical context” (Ryan, 2001). The experience of the sublime was described as “the strongest emotion which the mind is capable of feeling,” since “the passions ... which are conversant about the preservation of the individual ... are the most powerful of all the passions” (ibid, 86).

With the rise of Romanticism and Idealism as philosophical traditions in the eighteenth and nineteenth centuries in Europe, landscape painting and other visual representations of the sublime began to include images of wilderness, which was no “less solitary, mysterious, and chaotic, but rather in the new intellectual context these qualities were coveted” (Nash, 2001, 44) especially through the link between God and wilderness. Whereas wilderness represented evil and chaos, the Romantics valued wilderness as a place for spiritual rejuvenation (Kaufman, 1998). Visually, these concepts were portrayed in landscapes by positioning human figures as stand-ins or substitutes for the viewer, leading to a “feeling of both being in the scene and also outside of it, viewing it (and oneself) from a hither or more distant perspective” (Oravec, 1996, 65).

The American Puritans retained to a great degree the belief that only human landscapes were sublime, and that the untamed lands of the New World were an uncivilized place of darkness, a biblical wasteland that was described as a “waste and howling wilderness” whose “dark and dismal Western woods” were ‘the devil's den” (Nash, 2001, 36). But the introduction of the Romantic vision of the sublime as transcendent experience altered the sense of wilderness as dangerous. Translated to the new nation of America, this concept of the sublime was shaped to the American experience (Nye, 1994) and transformed into the American sublime where “the category of the sublime not only did much to render the wilderness, vastness, and chaos of the American landscape acceptable, but it also did somewhat in rendering other, hitherto objectionable things less objectionable” (Saum, 1990).

Transformed in the United States into “a religious experience of God in nature, as creation and revelation were merged” (Bryant, 2005, 36), the rhetoric of the sublime, both written and visual, was key to communicating the religious in nature. Reverend Jeremy Belknap, writing in 1813, described a New Hampshire scene as “elder Scripture, writ by God's own hand” (Marshall, 1988, 173), while a first-time visitor to Niagara Falls wrote “Roll on! thou great Niagara, roll on! and by thy ceaseless roaring, lead the minds of mortals from Nature’s contemplation up to Nature’s God” (Howard, 1879; quoted in Nye, 1994). In an examination of visitor’s writings about visiting Silver Springs in Florida,

many of the written descriptions of the early trips to the springs seemed to equate the journey with a spiritual transition to the afterlife, or to refer to the time-honored notion of the river as a metaphor for a spiritual journey to

the source, which, with the advent of tourism, became a regular mini-pageant acted out on the Ocklawaha (Ammidown, 1998, 245).

Visually, the sublime was characterized by an emphasis on “great widths, depths, and contrasts” (Oravec, 1996, 63), and an almost complete representational abstraction (ibid, 63). Landscape painters of the 1840s to 1860s, as exemplified by artists such as Fredric Church (Stephenson, 2005) and Thomas Moran, created vast landscapes which impressed by “sheer scale alone” (Stephenson, 2005). Moran’s vast canvas, the *Grand Canyon of the Yellowstone* (1872), was the first painting purchased by the United States government and was subsequently the first landscape painting to hang in the US Capitol Building; Hassrick, 2002).

Tourism and the sublime became intertwined in the American sublime, serving as a source of national identity (Jansen, 1995; Kasson, 1978), and fostering the shift in the American sublime from a solitary experience to one experienced within a crowd (Nye, 1994). Historian John Sears (1989, 4) wrote that

Tourism played a powerful role in America’s invention of itself as a culture...It was inevitable when they set out to establish a national culture in the 1820s and 1830s, that they would turn to the landscape of America as the basis of that culture.

With no great architectural monuments to rival that of the nineteenth century European Grand Tour, journeys to natural wonders to experience the sublime in landscape became the American Grand Tour and almost essential pilgrimages for many Americans (King, 2004; Nye, 1994). The tourist gaze, which developed with that of the Grand Tour, privileged a subjective, emotionally

charged and aestheticized appreciation of scenic beauty in general, and the sublime in particular (Urry, 1990), and became intertwined with consumption of mediated representations created by the culture industry (Jansson, 2002).

Patricia Jansen (1995, 8) wrote: “The importance of the sublime as an element in both elite and popular culture was well established by the late eighteenth century The craze for sublime experience entailed a new appreciation of natural phenomena.” Niagara Falls became America’s original iconic sublime experience—“the epitome of sublime nature in the New World” (McKinsey, 1985, 31)--both attracting and repelling visitors who were terrified and enraptured at the same time (McKinsey, 1985). Eventually, other sites such as Natural Bridge, Yosemite, Yellowstone, Grand Canyon and other natural wonders became sites of the natural sublime for Americans “seeking renewal through a transcendent experience of natural power” (Nye, 1994, 25). These sites served as affirmation that,

Indeed, these manifestations of the Creator, which brought one into the presence of the sublime, were at the same time embodiments of the culture's virtues and power that demonstrated it was the equal of, if not superior to, Europe. Always a stepchild to European culture when it came to history and tradition, America could now look to its natural spaces for its ancient history (Bryant, 2005, 37-38).

The American sublime came to embody “not only the wonders of nature and the virtues of democracy but also the economic success of the nation” (Sears, 1989, 43). The sublime “became less a philosophical idea and more a feature of practice” (Szerszynski, 2005, 61) which combined the magnificence of the national landscape with the human desire to control and reshape the land to

human purposes (Szerszynski, 2005). It is argued that the American sublime “served to authorize a policy of environmental devastation”:

Through the subtle turns of the American sublime, the liberal in taking axe and hammer to the virgin land could, with childlike innocence, proclaim that only through destruction of Nature's bounty could he feel by doing what nature commanded as if he were truly in touch with nature's will (Pease, 1986, 46)

The American sublime, recognizing human control over nature as the highest human achievement, expanded to include human-made objects as part of the experience. This new version of the sublime, defined as the technological sublime (Nye, 1994), celebrated the power to dominate nature by embracing man-made technological projects, such as the Erie Canal, which when it was inaugurated in 1825 was celebrated nationwide as a sign of technological progress (Nye, 1994). The Erie Canal, and subsequent technological creations such as the Hoover Dam, the Empire State Building, the Golden Gate Bridge, and the Apollo missions, provided opportunities for the American nation to see itself as a unified community (Nye, 1994). And in this new version of the sublime, these technological objects became linked with traditional tourist sites such as Niagara Falls, Yellowstone National Park, and the Grand Canyon where “Traveling to America’s natural wonders and great public works became the act of a good citizen” (Nye, 1994, 36). The technological sublime transformed the experience of “immensity and awe into a belief in national greatness” (Nye, 1994, 43) conflated with the idea of Manifest Destiny.

Next steps

To address the questions posed here on the representation of nature and the national parks in large format, Chapter 2 will examine in detail the cultural construction of the concept of nature. It will discuss the role of the National Park system in American identity and how the National Parks are themselves cultural constructs that whose meaning has changed over time. The chapter will examine the important role of vision, and in particular, conventions of the sublime in creating a national identity linked to nature.

Moving forward, Chapter 2 will discuss the objectivist representation of nature in films, pointing to their role in human perceptions (and responses to) the natural world. Concerns about legitimacy in nature films will be linked to the large format medium through a discussion of the physiological responses to this medium and the institutional linkages that connect large format back to truth-telling, ideology and the sublime.

Chapters 3 and 4 will detail the methods used to answer the questions as to how nature, the national park and Yellowstone are represented in large format, and the results obtained, which will then be discussed in light of the theories of ideology and the sublime, along with study limitations and suggestions for future research. Chapter 5 will discuss the results, suggesting how the large format technology impacts meaning, discuss research limitations and suggest next steps for research.

Chapter 2: Nature: Concept, American identity and imagery

Conceptualizing nature

Regardless of how the concept of nature is defined, “the mass-produced, popular culture version of nature is a major source of imagery and information shaping public understandings of environmental and scientific questions” (Davis, 1997, 10). The deceptive simplicity of the word hides the range of meanings that have been associated with it. Historian Peter Coates (1998) identified five somewhat overlapping categories which have been used to define nature:

- Nature as a physical place.
- Nature as the collective phenomenon of the world or universe.
- Nature as an essence, quality and/or principle that informs the workings of the world or universe.
- Nature as an inspiration and guide for people and source of authority governing human affairs.
- Nature as the conceptual opposite of culture.

At issue for understanding the concept of nature is the concern that the ways that people understand nature can affect how they act upon the physical environment (Olwig, 1996). How we understand nature impacts how we take care of it, how we use it and, ultimately, how we value nature in our daily lives. The taken-for-granted sense of nature elides the fact that it is one of the most “abstract and complicated concepts” (Olwig, 1996, 380), whose culturally-derived meaning has changed with time and place. In “Ideas of nature” Raymond Williams (1980, 67) noted that “the idea of nature contains, though often unnoticed, an extraordinary amount of human history.”

Despite this complexity, at its most basic, nature signifies everything that is “concrete, unmediated and naturally given” (Olwig, 1996, 380). The culturally-

specific meaning of the word allows for it to be used to justify the “rightness and inevitability of the world as known” (Davis, 1997, 31), and to authorize, among many examples that could be offered, gender characteristics, family structures, sexual behaviors and racial and imperial hierarchies. Saying that something occurs “naturally” is to say that something is to be taken as inevitable and correct.

Nature is understood as an objective reality with a physical presence—nature is that which is outside and non-human. This sense of nature as separate and apart from humanity and culture derives from the Romantic poets of the late eighteenth and nineteenth centuries, who understood nature as not man-made (Coates, 1998, 3). However, this idea of nature (i.e., what is not created by humans but exists in spite of us) has been used to naturalize and obscure relations of power. Nature, and the way it has been portrayed in poetry and painting, are part of a selective cultural tradition encoding a long history of “deeply exploitive social relations” (Davis, 1997, 10).

During the eighteenth and nineteenth centuries, nature was portrayed by European and American artists, writers and poets as a visual, touchable “out there” object, literally another world which was endowed with spiritual and cultural properties. This tradition rendered nature in opposition to human social organization, specifically the industrial city (Williams, 1980). The artistic practices of the eighteenth century were used to justify the gentry’s expanded property rights and dominance over the poor. The creation of estates and landscaped gardens, and the “development of artistic and cultural practices for

the appreciation of an anesthetized nature mark the upper classes as distinct from the working class” (DeLuca & Demo, 2000, 256). This naturalized the social and economic power of the wealthy (Davis, 1997), which stood in contrast to the lifestyles of the lower classes for whom nature was a constant and ever-present challenge to survival.

The creation of leisure practices associated with the natural world in the nineteenth century in Europe and America, such as hiking, drawing, and back to nature movements continued to serve as symbolic resources for class separation (Davis, 1997). In its aesthetic forms, appreciation of a separate version of nature suppressed awareness of class exploitation and was used to distinguish people from each other and normalize the differences between them. This concept of nature helped to “conceal the unequal relations on which industrial societies [were] built” (Davis, 1997, 10). But by the end of the nineteenth century the emergence of ecological science via evolutionary theory challenged the ideology of industrial capitalism and modernity (Coates, 1998), and changed the way that nature was understood. Nature came to be seen as a place to value and protect beyond price (Cronon, 1996), rather than “a force that was subversive to the power wielded by state, monarch, church and God” (Coates, 1998, 127).

Nature as American character: the National Park System

Established in 1916, the National Park Service (NPS) was charged with the specific responsibility to “promote and regulate” the uses of national parks, monuments and reservations designated by law in order to

conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment for the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations (National Park Service, 2006).

Ostensibly established to preserve spaces of spectacle and delight, the creation of the American national parks was “not as straightforward instances of the preservation of nature but rather as complex cultural representations or productions” that paralleled the developing media, urbanism and spectacle of the consumer culture as American identity” (Grusin, 2004, 3). The landscape of the national parks served broadly defined cultural ends which were “already artificial in the moment of [their] beholding, long before [they] become the subject of pictorial representation” (Mitchell, 1994, 14). Although visitors to the national parks considered themselves as outside society, the parks actually reproduced the cultural values that visitors sought to escape in the nature and wilderness that stand in opposition to that which is human-created (Cronon, 1995; Grusin, 2004; Tuan, 1971).

Although the first national parks—Yellowstone and Yosemite--were hailed as prime examples of pristine and unpeopled nature, they were actually the products of incursion and reconceptualization by the European-Americans of the early United States (Coates, 1998). The universal value of the National Park System obscured its class and ethnic connotations (Davis, 1997) serving “not as straightforward instances of the preservation of nature but rather as complex cultural representations or productions” (ibid, 3). Revisionist scholarship now considers that preservationist and environmentalist efforts in America actually reflect not

the story of an increasing recognition of the intrinsic value of nature or wilderness, but rather as the story of the increasing use of the ideology of nature's intrinsic value to further the social, cultural and political interests of a dominant race, class, gender or institutional formation (Grusin, 1998, 333).

American studies scholar Richard Grusin (2004, 1) commented that "it is something of a historical truism that the construction of American national identity has always been inseparable from nature." Lacking a history and cultural tradition, Americans turned to nature as a source of national pride, "building their civilization out of nature itself" (Jehlen, 1986, 3). Beginning with the establishment of Yellowstone in 1872 as the first national park, and the creation of the National Park Service in 1916 (charged with the responsibility to manage the national parks, monuments and reservations as designated by law), the spaces preserved as national parks served to embody the archetypal New World, which was the source of America's Manifest Destiny and technological progress (Bryant, 2005).

However, to understand the national parks it is important to recognize them as cultural constructs whose meaning has changed over time. From their initial construction as symbols of national identity, their identity has shifted to that of preservers of the American frontier, to today's perception of the national parks as sites where nature and technology are blended in an aesthetic that recognizes the ambiguous relationship of nature conservation and nature consumption (Louter, 2003). Through the national parks, we see ourselves "a part of, but not a disturbance to, the natural world" (ibid, 253). In the national parks we can also see reflected the linkage of landscape to social power, particularly in the

establishment and unification of the United States. Landscape and its semiotic features has been linked to both imperialism (Mitchell, 1994) and the creation of a national community through the construction of a fictional national landscape (Lopez, 1990; Miller, 1992).

This national landscape was to a great degree consolidated and constructed around the pivotal symbols of the national parks (Miller, 1996) through visual representations. Paintings initially were key to this symbology as they play an important role in ritualizing national myths, expansionism, supremacism, and capitalism (Hales, 1988; Kinsey, 1992; Novak, 2007). With the development of photography, photographs also became critical to the creation of the national landscape as “In the early coming of age of nation-states, the material cultures of photography [and] art...served as rhetorical vehicles for the founding narratives of history” (Paakspuu, 2007, 49). The same photographs also became foundation texts in the “construction of a wilderness vision that has shaped the contours and trajectory of environmental politics” (DeLuca & Demo, 2000, 242). Eventually, these images came to stand in as mental abstractions removed from the actual place; “in conjunction with the discourses of tourism, nationalism, romanticism, expansionism, and religion” (DeLuca & Demo, 2000, 244) they confused the representation and reality of the landscape they portrayed (Miller, 1996).

Indeed, the conventions used to represent the national landscape suggest that what has been preserved in the national parks is not nature itself, but a particular concept of nature and landscape that has been shaped by “pictorial,

literary, philosophical, social and political discourses” (John, 2007, 5-6). This landscape idea understands land as a social and cultural symbol (Cosgrove, 1998) which articulates cultural identities based on such categories as class, gender, religion and nation (Boime, 1991; Cosgrove, 1998; Daniels, 1993; Jackson, 1992; Pratt, 1992). In the United States, the construction of the national landscape has to a great degree been predicated on the aesthetic of the sublime. Paintings and photographs of the national landscape evidenced a specific set of conventions of the sublime which differed from the European experience of the sublime. In America the sublime was understood as the religious experience of God in nature (Novak, 2007), in consequence positioning “the viewer with respect to specific, social, political or ethical issues” (Cronon, 1992, 80-81). This allowed Americans, who were both participants in and witnesses to God’s natural laws “manifest in the land and the republic” (Bryant, 2005, 36) of the new nation to consider the landscape as “embodiments of the culture’s virtues and power that demonstrated it was the equal of, if not superior to, Europe” (ibid, 37). Indeed, the sublime as concept served to idealize specific sites in America as worthy of preservation. William Cronon (1995, 63) notes that

One has only to think of the sites that Americans chose for their first national parks—Yellowstone, Yosemite, Grand Canyon, Rainier, Zion—to realize that virtually all of them fit one or more of these categories. Less sublime landscapes simply did not appear worthy of such protection; not until the 1940s, for instance, would the first swamp be honored, in Everglades National Park, and to this day there is no national park in the grasslands.

The sublime also served to project human preferences for the natural environment, with the result that visitors “were often unable to view the sites

without preconceptions; the images forever changed perceptions of the land and its meaning for the culture that inhabited it” (Kinsey, 1992, 11-12). Viewers of a place deemed sublime often saw images of it first and thus came to it with experience of the view and expectations for its impact (Nye, 1994). At issue was the lack of correspondence between the representation of a sublime scene and the reality, casting in doubt the accuracy of sublime representation as well as the fundamental issue of representation itself (Oravec, 1996).

As an intimate part of the national psyche, nature formed the character of the people and the country (Stegner, 1960), with the experience of sublime landscape serving as “repository and representation of the national spirit” (Nye, 1994, 25). By preserving the national park spaces, “common nature” was preserved for use by the national community (Olwig, 1996) and converted into sites of visual consumption (Williams, 1972). Linked as it was with travel or pilgrimage, the experience of the sublime in the national parks was akin to a religious encounter with the divine. The ideal tourist itinerary in America after 1865 included the national parks Yosemite, Yellowstone and the Grand Canyon, which stood in for the man-made buildings and monuments of Europe (Runte, 1979) and represented a “passionate experience of beauty and the sublime” (Urry, 1990, 4).

The nature set apart in the parks served as sacred sites in which the pilgrimage embodied “the intensified version of the collective ideals of the culture” (Morinis, 1992, 4). Visitors were encouraged to recognize the untouched wilderness and sublime vistas as a means to renew their connections with God

(Hassrick, 2002; Rast, 1998) through interpretive programs that encouraged the visitors to reflect on their personal interaction as a solemn experience (Biel, 2006).

But in contrast to the solitude of the Grand Tour, the American Tour was experienced in a crowd, confirming both the importance and the shared values of the experience (Nye, 1994). Construction of roads and public spaces was designed to take advantage and guide visitors to sublime visual spectacles (Mitchell, 2000), which mimicked museological techniques of display, exhibition and presentation through panoramas, overlooks and viewing platforms (the “museum effect”; Kirshenblatt-Gimblett, 1990) and shaped the visitor’s experience of the park (Patin, 1999). Art historian Thomas Patin (1999, 48) wrote,

There are many general similarities between the ways that museums and galleries present their objects of display and the ways the parks present nature to visitors. This includes the design of entrances, the display of information, the control and direction of traffic patterns, and the regulation of the positions of visitors- in general, modes of organizing vision through the presentation of objects and spaces for what we can call the “museological gaze.” Museums and galleries have grand entrances, pathways, controlled traffic patterns, framed views, vistas, prospects, signs, information texts, labels, restaurants, and reproductions available in gift shops. In parks, there are also grand entrances, roads, trails, paths, framed views, vistas, prospects, signs, information texts, labels, restaurants, food available, and shops with pictures of wonders.

Nature as a source of spectacle (MacNaghten & Urry, 1998) thus became intimately tied into tourism and leisure, creating spaces with pronounced visual character (Lefebvre, 1991)--scenery and landscape--for visual consumption (Macnaghten & Urry, 1998). Yellowstone, the first national park, and many national parks after that, were chosen and preserved specifically as they were

places of spectacle and visual appeal, as it was believed that the occasional viewing of natural scenery—particularly scenery of a sublime or impressive character—had psychological and physiological benefits (Grusin, 1998) as enjoyment of the natural world free of human presence provided “freedom from the grip of the external world” (Freud, 1971, 381).

Unfortunately, focusing on the sublime as a focal point for the public conception of nature and the environment has been equated with encouraging the consumption and subsequent cheapening of nature (Masteller, 1981), as the rationale for preserving nature does not always accompany the ideology of scenic appreciation (Nash, 2001). The tourist gaze (Urry, 1990)—from which all that is undesirable or ugly is omitted—ended up shaping the selection and idealization of nature imagery (Ingram, 2000), as a simultaneous “idolization and commodification of nature combined with an aggressive exaltation and effacement of any distinction between real and made nature” (Smith, 1996, 37).

Visualizing nature

Nature presented visually has been a common thread of human visual arts, from such early beginnings as the cave paintings at Lascaux, through the success of the television channels *Animal Planet* and *National Geographic*. Visual nature allows viewers to see nature as they never could in the real world by giving them an unobstructed, unimpeded view (Davis, 1997). The organization of representations of nature around vision, however, encourages a separation of humanity from the natural world (Wilson, 1992). The viewer is

shown the spectacle of nature—images which generate visceral responses by the “sheer audacity of the image itself” (Scott, 2003, 30)—which promises intimacy with the natural world but presents nature only as a resource or spectacle to be consumed (Wilson, 1992). In his discussion of the role of the stereograph in the American opening of the Western frontier, Richard Masteller (1981, 56) noted that stereographs fostered a “tendency towards simultaneous reverence and indifference for the land. They represent awe followed by appropriation, enthusiasm degenerating into entertainment.” Visual technologies, such as described with the stereograph, set up new ways of seeing, enunciating and categorizing nature based on the speed with which it was traversed (“Speed changes the world vision”; Virilio, 1999, 14). It is argued that as simulation and not first-hand experience, such images enter popular culture as the “operative cultural signifier” (Hayles, 1996, 410). Nature became an object for visual consumption, and in consequence

left the realm of firsthand experience and entered the category of constructed experience that we can appropriately call simulation. Ironically, many of the experiences contemporary Americans most readily identify with nature...could equally well be considered simulation (ibid, 411).

In the early days of America’s history, visual nature was generally identified with that of landscape painting. Unlike landscape painting in Europe, American landscape painting tended to be “imbued with “culturally rich iconographic and symbolic meaning” (Grusin, 2004, 4) and represented the natural landscape’s place in the construction of American national identity (Miller, 1996). Through the late 1800’s, works by artists such as Thomas Cole, Frederic

Church, and Asher Durand connected landscape to nation-building. Eventually, this shared concern with nation-building gave way to the concerns of the developing consumer culture (Grusin, 2004). “[T]he national landscape eventually collapsed as an anachronism in an age when communal associations were increasingly marketed through new media” (Miller, 1992, 209).

Western tourism and the “acquisition” of spectacle through self-vision (Shaffer, 1998) made the national parks elemental to the creation of the American national identity. Two artists in particular, the painter Thomas Moran and the photographer William Henry Jackson, have been credited with establishing support for the creation of Yellowstone, the first national park. Although Howard Bossen (1981) argues that the lack of reference to Jackson’s photographs in primary documents promoting legislation to create the park does not support a critical role for the images in the eventual designation of Yellowstone as the first national park, the role of Moran and Jackson in the creation of the National Park system has taken on the status as myth. Both men were part of the 1871 government geological survey team expedition which explored the Yellowstone valley. (In, perhaps, a nod to the future commercialization of nature photographs, Moran was sponsored by the Northern Pacific Railroad, which had an interest in promoting tourism to Yellowstone as a revenue stream.) Subsequently their work was displayed in the U.S. Capitol rotunda as part of the lobbying efforts to preserve the two million acres of land that would become Yellowstone National Park, and Moran’s 1872 painting—*Grand Canyon of the Yellowstone*—became the first painting purchased by the

United States government. Importantly, many people, once they had seen Moran's paintings, found that they were "unable to view the sites without preconceptions; the images forever changed perceptions of the land and its meaning for the culture that inhabited it" (Kinsey, 1992, 11-12).

Within 20 years of its founding, Yellowstone National Park became the "Nation's Art Gallery" (Hassrick, 2005, 106). From the first accounts of its existence, visuality was key to the dissemination of Yellowstone's iconic appeal, although examination of the congressional deliberations surrounding its creation do not point to the area's "aesthetic, spiritual, or cultural values of wilderness" as rationale for establishment of the park (Nash, 2001, 108). Rather, the images of Yellowstone provided the impetus to rationalize the preservation of the space as something unique to American identity. In an era before widespread use of photography, illustrations in the form of etchings and watercolors "played an important and culturally well-defined role in the visual reporting of natural and historical events" (Grusin, 2004, 60). *Scribners*, the *New York Tribune*, and *Harper's* turned down the diary of the David Folsom and Charles Cook 1869 expedition to Yellowstone because the material was deemed unreliable. By contrast, the 1870 account was legitimated both through its status as a military expedition *and* the images produced by team members: "representational fidelity derive[d] from both institutional validation and from the valorization of the visual over the verbal" (Grusin, 2004, 60). The original etchings and watercolors from the Washburn expedition of 1870 to Yellowstone were printed as a serial in *Scribner's Monthly* (Schullery, 2004) and were the impetus for the 1871

expedition that ultimately led to Yellowstone's founding. As Peter Hassrick discusses in his book, *Drawn to Yellowstone: Artists in America's First National Park* (2002, 11),

It was, of course, the artists (and a cadre of photographers who are beyond the scope of this study) who responded most vigorously to the aesthetic underpinnings of the park. In so doing they provided a fundamental and often overlooked service. If one of the primary motivations behind the park was public enjoyment, the artists played a vital secondary role. Though perceived as a grand democratic gesture, the park throughout much of its history was physically available to only a prosperous few, since the economies of travel put Yellowstone beyond the reach of a great many Americans. The art found wide public dissemination and proved to be a far more effective manner of communicating the scenic wonders of Yellowstone than the written word.

With the advent and widespread dissemination of photography, images of Yellowstone continued to circulate through American society: initially in the form of stereographs (Hales, 1988; Whittlesey & Watry 2008), then in the tens of millions of postcards published before the mid-1900's (Saunders, 1996), as photographs in tourist guides manuals which "ordered or institutionalized the scenery for ease of consumption" and where readers were "preprogrammed for rapture"⁸ (Hassrick, 2002, 90), in early films ("films that featured the natural attractions of American were routinely included in early film programs"; Cahn, 1996, 85; Peterson, 2006), and through interpretive programs within the park (pamphlets, signs, markers, trails, exhibits; Grusin, 1995). Today, the visitor to Yellowstone is more likely to experience the park initially online through the Internet for vacation planning (Oschell, 2009), through one of the forty three films listed on the Internet Movie Database (IMDB, www.imdb.com) which have the

⁸ Cecelia Tichi (1987, 2000) discusses middle-class travelers' descriptions of Yellowstone as a volcanic hell as an expression of anxieties about the industrialization of America in the 1880s.

word “Yellowstone” in the title, or through programs on one of the television channels about nature and science.

Film, large format, and the mediation of nature

Before entering the park, visitors may also experience Yellowstone visually in the large format film *Yellowstone* (1994). Described by Joanna Ploeger (2004, 80) as emblematic of an “egregious example of scientism and its close relationship to the ideologies of colonialism that transform natural systems and native cultures into objects for control by science”, this large format film has been in continuous showing since its 1994 release. Large format films have been described as having a “unique form of spectatorial engagement” (Rose, 2007, 1) by virtue of the immersive quality, engagement, spectacle, and affect⁹ associated with their giant visuals and surround-sound. Given the historical institutional alliances of large format theaters with museums, science centers and historical sites, these films hew very closely to the perceived affiliation between the scientific and photographic logics of representation (Grusin, 2004) which have imbued film with a sense of truth-telling due to its historical roots as a technology of scientific objectivity.

For films about the natural world (which includes films about natural environments and wildlife), legitimacy has been granted “precisely through a

⁹ Eric Rose (2007) notes that immersive nature of large format is unsubstantiated in the literature; Griffiths (2008) notes that large format has borrowed heavily from the panorama and planetarium as sources for metaphors of immersion. This research is not equipped to prove or disprove the immersive nature of large format and assumes immersivity through previous work on screen size and affect (Detenber & Reeves, 1996; Lombard et.al., 2000; Reeves, Lombard & Melwani, 1992; Reeves & Nass, 1996) and audience studies such as by Flagg (1999).

tradition that views the camera as a scientific instrument, an instrument of objective observation” (Darley, 2003, 242). Nature films are seen as invisible mediators between first-hand experience and exhibition (Davies, 2000a). This sense of film as mechanically objective is a major component of the highly mediated world of present day life-science (Mitman, 1993, Vernon, 1993). Yet, nature film, with its conventions of realism adopted from the museum and zoo (Mitman, 1993) functions “as a border object in the worlds of both science and entertainment” (Davies, 2000a, 256), with dislocations between place and scale adding values and authority to the images.

Karen Scott, of the National Museum of Photography, Film and Television, described nature films as following a limited range of codes and conventions. Scott noted that the texts tend to be closed, and the “relationship between a viewer and the text [becomes] more didactic as the space for individual interpretation by the viewer is minimized” (Scott, 2003, 30). Akin to the psychological benefits associated with visiting the national parks, “the content and style of natural history programs echo aspects of the Romantic movement’s attitudes towards nature such as aesthetic enjoyment combined with ideals of order, associated with an escapist tradition viewing nature as a source of renewal” (Jeffries, 2003, 528).

The objectivist sense of nature films—that they represent the reality of nature—elides the truth of nature filmmaking. The idea that images are recorded and played back without editing conceals the extensive reshaping of footage into the final product (Bouse, 2000). Like other film genres, nature films follow the

conventions of edited montage and construction which produce a particular point of view through filmic capture and editing. New media scholar Andrew Darley (2003, 241) noted that, “The bedrock of natural history programs, the vaunted causal relationship between a photographic image and phenomenal reality, that once lay at the heart of documentary, has here completely disappeared.” As a result, the filmic representation of nature lies somewhere between representation and simulation.

It is argued that the narrative conventions of motion picture films—dramatic structure, conflict, resolution—were “hard to avoid” (Bouse, 2000, 129) in nature films. At issue is the fact that “*none of these things are found in nature*” (ibid, 129; italics in original) and in consequence, nature films are not only *not* representative of nature, but in fact may alter our sense of what real nature is, making “us less, not more sensitive to it” (ibid, 8). The view of nature and the natural world in nature films, with their focus on plants and animals separate and apart from humanity, can be seen as examples of “an impoverished view of the natural world” (Jeffries, 2003, 532). With their “greater claim to an ontological oneness with reality, but with just as much reliance on the narrative and formal artifices of classic realist cinema” (Bouse, 2000, 18) nature films “might entail an even greater potential for naturalizing ideological values” (ibid, 8).

Academic and filmmaker David Bouse (1988, 129) notes that “the often invisible lines in film between documentary, entertainment, education, and even art, have continued to be a source of vexation.” Films about the natural world are, for many, the only access point to nature. As cultural constructions, they

are “potent bearers of meanings about nature in contemporary culture” (Davies, 2000b, 539) constructing an image of nature free of human involvement where the narratives of animal evolution and human discovery are validated by the naturalism of their film-making techniques (Crowther, 1995; Davies, 2000b). Film, as a representational medium, especially of the natural world, serves to displace the connection between place and individual, diminishing the sense of scale and changing our sense of the natural world to nothing more than a series of visual impressions (Davies, 2000a).

The expansion of new media and the means and contexts of distribution, like that of earlier changes in the relationship of human to animal, influence the ways we understand nature and the environment (Bouse, 2000; Mitman, 1999). In 1940, Fairfield Osborn, director of the New York Zoological Society, changed the way that zoos presented animals by eliminating the display of animals in cages. His work in reconfiguring zoo spaces impacted the culture of nature representation, shifting the desired experience of nature from that of the aesthetic to the transcendent. Osborn’s zoo spaces sought to provide the viewer with a place to experience the sublime, which, instead of focusing on the unique elements of nature, was refocused by the camera’s “panoramic view, unlimited by the individual observer’s subjective and partial experience” (Mitman, 1996, 121).

The continued evolution of image technology, especially the development of high-definition, digital and large format has raised concern that the increasing call for drama and spectacle will result in more artifice and simulation. Such films

are “more likely to appeal...to the emotions rather than the intellect, to the heart rather than the head, and would thus put greater emphasis on sensation and spectacle rather than science” (Bouse, 2000, 188). Reducing nature to the spectacle of exotic locations, cute and comic presentations (Jeffries, 2003), or to the simulation and hyper-realism of films such as *Walking with Dinosaurs* (1999), will result in greater focus on form and less on content (and by extension, about nature itself) (Darley, 2003; Jameson, 1984). When signs are separated from their referents (as when communication is understood to be an absolute representation of reality) the simulated experience becomes more real—hyperreal—than the original (Baudrillard, 1981, 1983). As part of the general preoccupation with form and image of the “cultural logic” of the late capitalist world (Jameson, 1984) images then stand in for the real sign and the world is inhabited as simulation, a hyperreal stage which “bears no relation to any reality whatever: it is its own pure simulacrum” (Baudrillard, 1984, 256).

When linked with technology, hyperreality “give[s] us more reality than nature can” (Eco, 1986, 44). The simulation of nature becomes a reality where “everything looks real, and therefore it is real; in any case, the fact that it seems real is real, and the thing is real even if [...] it never existed” (Eco, 1986, 16). It has been shown that when parsing participant’s sense of wilderness, direct interaction with nature was important but media were shown to play a crucial role in meaning making (Murphy, 1988). For film in particular, it is argued that the depiction of nature in film today lies somewhere between representation and simulation, and that imaging developments such as high definition and large

format encourage the development of spectacle and hyperreality (Bouse, 2000; Darley, 2003).

Large format films such as *Yellowstone* are a specific and particularly visual mode of communication. The “large” in large format references both the size of the film frame as well as the size of the theater and the film experience. More accurately referenced as 15 perforation/70 millimeter¹⁰, large format frames contain approximately 10 times more information than the 35mm frame. They have an aspect ratio of 1.435:1, as compared to the Motion Picture Academy of Arts and Sciences ratio of 1.37:1, meaning that the image of a large format film is both wider and taller than the Hollywood-standard 35 mm film.

The large format industry claims that the experience of the films is one of total immersion and participation, promoting themselves as a “literal embodiment of McLuhan’s suggestion that technologies are the extensions of human beings” (Acland, 1997, 301). According to these claims, large format, along with virtual reality, generates the highest level of immersion for communication formats (Gander, 1999). The sense of being incorporated or immersed in the filmic (diegetic) action is a combination of the effect of the screen size (which has been shown to have an impact on the viewer’s responses to images), the audience’s position in relation to the screen (Recuber, 2007; Wollen, 1993), and the surround sound systems which can allow the sound “to mimic the directionality of the visual stimuli” (Rose, 2007, 22). In combination, these technological characteristics make viewers feel like they are part of the action on the screen, “morphed into the illusion through the numerous technologies that bombard

¹⁰ See definition in Chapter 1.

[their] senses” (Ndalianis, 2000, 264). Known as presence, it is considered an evolutionary response of a brain wired for visual stimulus where all visual inputs are real objects. Humans respond socially and naturally to media, both consciously and subconsciously (Reeves & Nass, 1996); the large format experience heightens this potential through the visual strategies that link to unconscious responses of the human visual system to image size (Keltner & Haidt, 2003).

Presence can be defined through social richness (warmth or intimacy possible via a medium), realism (perceptual and/or social), transportation (sensation of going there, it is here, or we are together), and immersion (in a mediated environment) and has been implicated in the development of physiological arousal, feelings of self-motion, motion sickness, enjoyment, involvement, improved task performance and skill training, psychological desensitization, persuasion, distorted memory and social judgments, and more intense parasocial relationships (Lombard et. al., 2000).

Psychologically, the size of an image alters the response of the viewer to the content through the arousal of physiological responses related to the activation of peripheral vision, an important component in the scanning of the environment for changes that may indicate danger. Reeves and Nass (1996, 194) note that “size is one of the most primitive cues we have about what’s happening in the environment as movement in the peripheral field is associated with increased arousal.” Viewers evaluated people shown on a large screen more favorably than those on a smaller screen (Reeves, Lombard & Melwani,

1992), and self-rated the viewing of a large screen as more arousing (Detenber & Reeves, 1996), and action as more intense (Lombard, 1995). Larger screens, and by corollary, larger images, resulted in increased attention to and recall of media messages (Grabe et al., 1999; Reeves & Nass, 1996).

The affective nature of large screens is most likely an unconscious consequence of the brain's neural pathways and structures for processing information. Research on the brain indicates that there are several ways in which information is processed. For large format, it is likely that information is sent directly to the amygdala before being sent to the neocortex, with the result that information is processed emotionally prior to a thoughtful, conscious response (Barry, 1997). Prior to conscious "thought" on the part of the viewer, the body has already prepared a response to the images which will accomplish goals associated with survival. While cognition is a function of the integration of the two primary systems of knowing--the rational and the intuitive--visual intelligence is essentially intuitive, drawing on perception, memory, imagination and logic. Research has shown that visual information, synthesized in the prefrontal lobes with other unconscious information, forms unconscious biases that guide and generate behavior (LeDoux, 1986; Goleman, 1995; Bechara, Damasio, Tranel & Damasio, 1997). This means that visual images have a far greater potential to impact the viewer, as "visual messages are mostly processed by unconscious regions of the brain that do not understand that art and mass media are not reality" (Barry, 2005, 61). Barry (1997, 231) noted:

as a technological invention with the capacity of altering the appearance and experience of that world, [film] ultimately represents a potential for the

manipulation of that reality, particularly at the most significant point where impressions are first formed in perceptual process, through the emotions.

If, for Andre Bazin (1976, 20), the eventual goal for cinema was to achieve reality as a “reconstruction of the perfect illusion of the outside world in sound, color and relief,” large format represents another step in that progression even further than Cinerama in the 1950s (Belton, 1992). As represented by the realistic appearance of the diegetic (screen) space in both time and space, Bazin promoted the work of filmmakers such as von Stroheim, Murnau and Flaherty, whose films were characterized by two major camera techniques--composition by wide field framing or deep focus¹¹, and extended shot length¹²—which resulted in a closer relationship between the film running time and the time that it actually took the events to occur within the film.

Deep focus and extended shot length are both essential characteristics of large format film. With its technological capacity for mimicking the human field of vision, large format could be described as coming closest to the “total” cinema posited by Bazin, which envisioned “cinema as a total and complete representation of reality” (Bazin, 20, 1967). Because of the clarity and size of the filmic images, large format films create an affective experience in which the film viewer has a heightened sense of being part of the action on the screen, characteristics which are associated with enhanced memory and retention (Grabe et. al., 1999; Reeves & Nass, 1996). Large format “takes the world out

¹¹ Deep focus is defined as a shot in which all images in the frame, whether near or far, are in focus.

¹² Shot length is defined as a single continuous take from one camera setup.

there and enlarges it to gigantic proportions, heightening the sensation of virtual presence and haptic immersion” (Griffiths, 2008, 95).

The format has been linked historically (but not teleologically) to a history of imaging technologies which promised spectacle, engagement, immersion, participation, and a visceral, affective response to images. Forerunners of large format included the panorama¹³ with its rhetoric of monumentality (“big subjects for big pictures”; Griffiths, 2008, 47), realism and sublimity (Griffiths, 2008; Higginson, 1998); the cyclorama, and the widescreen formats of the 1950s such as Cinerama, CinemaScope and VistaVision¹⁴, which served as disseminators of propaganda and “overt agent[s] of ideology, functioning as a means of displaying the scenic wonders of America” (Belton, 1992, 89). Large format can also be likened to the “supersensory space rides and voyages at Disneyworld” (Ross, 1994, 82). It is

“[a] particular vision of what is meant by film innovation, involving continued technological experimentation with film and with infrastructure in order to extend the viewing experience beyond that of conventional, commercial cinema” (Acland, 1997, 292).

As with these earlier technologies and ways of seeing, large format offers the audience an active participation in vision where directors do not lead the audience to see only what they see but to allow the audience to be “on their own”

¹³ Alison Griffiths (2006, 2008) points out that large format movement is perpendicular into the frame as penetrating space, as compared to the horizontal or panoramic movement of the panorama; the term “panorama” no longer references the visual movement common to that visual technology, but rather to an overall view.

¹⁴ These three widescreen film formats all provide images that are wider than the normal 35 mm Hollywood standard. Cinerama is a triple camera and projector system. VistaVision is a single camera projector system in which the film is shot and shown on its horizontal axis to give a wider and less grainy image. CinemaScope is an anamorphic process which produced images twice as wide as conventional lenses (Belton, 1992).

(Dickinson, 1971)¹⁵ and actively participate in the viewing process. The size of the screen and the amount of “information” in each image required greater participation on the part of the viewer to digest the image content (Belton, 1992). Shown on both dome or flat screens that are up to 30 meters high (flatscreen) or 30 meters in diameter (dome screen) (Big Movie Zone, 2006), large format films mimic the range of human vision (Wollen, 1993).

The spectacle-centered focus of large format films results in an experience of “extremities and special effects” (Ross, 1994, 82) which is characterized by the spatial scale of its affect. As an extension of the continuum of the use of photography for the institutional presentation of nature, large format presents a globalist ideology with an epic perspective that is planetary in terms of subject matter (Ross, 1994). Films such as *Blue Planet* (1990), *Tropical Rain Forest* (1993), and *Cosmic Voyage* (1996), and even those films that are locally specific in their scope (such as *Yellowstone*), tend to emphasize the role of humanity as a whole in shaping and preserving an increasingly fragile world.

Aligned not only with the history of technology, but also to cultural history (Grau, 1998), large format effects have been likened to the organized sublime views of the overlooks, viewing platforms and viewcuts common to the national park experience (Patin, 2000). In large format, the height of the screen and the use of “pre-existing frameworks for understanding rare and extreme experience” (Whitney, 2005, 13) promote a sublime experience: the sublime is present in the great beauty of the images which are

¹⁵ Large format shots tend to be longer to allow time for the viewer to scan and assimilate the images and sounds (Wollen, 2003).

both illuminating and terrifying, underscored by the contradictory appeal of the infinite. Its seductive force invites surrender to its wonders as well as to its disordered horror...the threat and promise of the image overtaking us compels us to look and also to be fearful, less of what we will see but how we will feel when we see it (Wasson, 2007, 85).

Large format has also been shaped by the traditional association of their theatres with museums, science centers, and historical sites, “bearing the marks of its own technological specificity and institutions” (Wasson, 2007, 83).

Although Charles Acland commented that the subject matter of the films was superfluous, and that it was the “spectacle of seeing and the technological excess necessary to mount that spectacle” (Acland, 1997, 304) that was important, subject matter is critical to the venues in which these films are shown.

The *IMAX15/70 Filmmaker's Manual* (1999, 6) describes this relationship as:

Many of the existing theatres are affiliated with museums or other institutions. Traditionally, they have strongly influenced the types of films that get financing and the budgets available. Some of these institutions, for example, have strictly educational mandates, which mean they may not be able to run dramatic films unless they have an educational component.

This interaction between filmmaker and exhibitor results in institutions indicating “how important it is for them to be consulted before and during production in order to be sure that the historical/scientific/educational aspects are appropriately addressed” (Shindler & Shindler, 2001, 23-24). As a result institutions play a critical role in framing the ideological knowledges that are disseminated through their theaters. This can be facilitated through the alignment of content with institutional mission in the final product or, by refusing to participate in the exhibition of a specific film, such as films which mention or discuss evolution,

including *Volcanoes of the Deep Sea* (2003), and *Galapagos* (1999) (Dean, 2005).

Because of the expense of making the films, they are generally funded by large corporations with specific aims (e.g., Lockheed-Martin, NASA, Smithsonian Institution etc.; Wollen, 2003) which reflect primarily celebratory nationalist and hegemonic values (Denzin, 1995; Griffiths, 2006; Wollen, 2003). In large format, the gaze is aligned with that of the “conqueror’s omniscient view” (Hayward & Wollen, 1993). Within the theaters, films are often chosen for display because of their alignment with mission statements and state education standards, their connection to existing, on-site experiences, and the generally unacknowledged mission of educational entertainment, or “edutainment,” a highly debated issue within museums that must compete with other entertainment venues for the visitor’s attention, time and dollars.

Films tend to fall into categories of nature, science or technology, tourism, adventure, and civilization (Koster, 2000; Wollen, 2003). For those films about nature,

a sort of postcard environmentalism is undeniably apparent...Despite the gigantic images, the world appears small in these films, or at least negotiable in the span of a relatively short movie. Awe-inspiring, exciting, and non-threatening, a vague environmentalist ethic emerges from the majesty of the image of the natural world. Here, environmentalism mostly refers to a glorification of landscape, which in turn acts as an immense backdrop to a sort of video game traveling experience. In this respect, IMAX cinema-going is often a form of nature tourism enabled by the most technologized of circumstances (Acland, 1997, 295).

Nature in large format is often represented as a place to be controlled and managed by human intervention--nature tourism framed through the use of

science and technology to control and conquer nature. As Joanna Ploeger (2004) described in her rhetorical analysis of the large format film, *Yellowstone*, human agency is shown acting upon Yellowstone by increasingly technological means, drawing upon and expanding cultural viewpoints of the Western frontier. Yet the images of nature in large format, shown through the gigantic, enveloping images of the giant screen, can also remind us--as an experience of the Burkean sublime¹⁶--of the destructive forces of nature in films such as *Everest* (1998), *Hurricane on the Bayou* (2006) and (the aptly named) *Forces of Nature* (2004); as well as our minor status in the world by stretching the limits of human vision in *Cosmic Voyage* (1996), *SolarMax* (2000), and *Space Station* (2002), (Wasson, 2007).

Because the films are aligned with educational or historical institutions with an emphasis on education and the dissemination of knowledge, their content is validated as “truth,” as what makes images meaningful are the discursive systems through which they are presented (Tagg, 1988). The indexical nature of large format likely guarantees everything through its connection with the “truth” structure of its institutional association. Even when the films are less narrative and more visceral stimulation, such as with large format, they would be understood as truth because of their association with a pedagogical institution. The films can be seen to be codified as evidential force, similar to that for photography, which is a “complex historical outcome and is exercised by photographs only within certain institutional practices and within particular

¹⁶ As addressed by Edmund Burke in *A Philosophical Inquiry into the Origin of Our Ideas of the Sublime and Beautiful* (1756), sublimity was recognized as an aesthetic concept that was both distinct from beauty and linked to the response to nature.

historical relations” (Tagg, 1988, 4). These institutional practices intensify the identification of the observer with the large format images and alter the sign/signifier relationship of these images for the viewer, possibly impacting the ability for negotiated or oppositional readings.

The all-engulfing, panoramic images of large format are “ideologically linked to the reinstatement of certain forms of epistemological power” (Acland, 1998, 434). The films not only order and organize images to present to the audience a specific understanding of the world that lies beyond the screen, but corral vision to fit it within the parameters of its institutional association, integrating large format into the cultural and social complex of ideas and beliefs that constitute the culture complex. These films are primarily didactic in nature to appeal to the school-group audiences that make up a significant percentage of ticket sales in museums and science centers (Griffiths, 2006). Described as “techno-scientific tourism” (Ploeger, 2004) large format routinely exoticizes people and places into the “other” consistent with the history of museum display (Bennett, 1995), leading to questions about the kind of knowledges that large format produces (Ploeger, 2004).

It has been said that each characteristic of film has a “counterpart in perception: the camera close-up, angle, composition, image size and lighting mechanistically parallel the activity of ‘attention’ that operates on the world of sensation and motion” (Munsterberg, 1916/1970). Editing conventions parallel the ability of memory and imagination to compress time and space (Barry, 1997). For large format, limitations of the technology have meant that certain

conventions are not applicable due to issues with cassette length (the canister that holds the raw film), lighting needs, image size, screen shape, and the perceptual impact of the images (IMAX Corporation, 1999). An inability to use close-ups, shot/reverse-shot and other editing conventions due to issues with lighting, sound and the impact of these conventions on viewer's responses to the large images (Hayward & Wollen, 1993; IMAX Corporation, 1999), meant that large format is dependent on point of view shots, which do not "construct identification with character nor implicate the viewer in action motivating the narrative (Wollen, 2003, 28); panoramic shots, which reflect the movement of the human vision over the field of view; and long shots, which serve to "diminish the human scale" (Sitney, 1993, 108). Tana Wollen (1993, 28) believes that this particular vision of the world means that the viewer "has neither the time nor the distance to forge an emotional or thoughtful relationship with what appears on the screen." For writer Alice Biel (2006, 150), the question regarding our use of technologies such as large format to "see" the natural world is

whether, with the rise of these virtual environments, in which everything we see and experience is filtered through a technological medium, seeing the world with one's own eyes will become more or less important, and whether people's desire to see the natural world for themselves, and have the natural world look back, will increase or simply dissipate.

Chapter 3. Analyzing *Yellowstone*: Methods

Previous academic research on large format films and the large format medium has considered screen size, affect and presence (Detenber & Reeves, 1996; Grabe, et. al., 1999; Lombard, Ditton, Grabe & Reich, 1997; Lombard & Melwani, 1992; Reeves & Nass, 1996); gaze, vision and spectatorship (Acland, 1998; Belton, 1992; Hayward & Wollen, 1993; Nucci, 2005; Rabinovitz, 2004; Recuber, 2007; Virilio, 1990; Wollen, 1993); spectacle and rhetoric (Ploeger, 2004); screen space (Wasson, 2007); culture and ideology (Acland, 1997, 1998; Belton, 1992; Nucci, 2008; Wasson, 2007); tourism and representation (Acland, 1998; Ploeger, 2004; Zonn, 1990); and the history of imaging technologies (Belton, 1992; Carr & Hayes, 1988; Griffiths, 2004; Higgie, 1998; Ross, 1994). My research will add to the literature by providing a critical cultural case study of the links between production, text and audience response for the film *Yellowstone* to “understand how a cultural text specifically embodies and enacts particular ranges of values, beliefs and ideas” (White, 1992, 163) .

To consider whether the large format industry’s political-economic production is reproduced through the major visual and verbal messages as ideological reality (Harry, 2005, 540), this research used a multiperspectival approach common to cultural studies (Frow & Morris, 2000; Kellner, 1997) to examine the intersections between the production, distribution and consumption of textual constructions. Douglas Kellner (2002, 12) wrote: “At its strongest, cultural studies contains a threefold project of analyzing the production and

political economy of culture, cultural texts, and the audience reception of those texts and their effects.” Through the combination of a political economy analysis of the large format industry, a close reading of the film *Yellowstone*, and reception studies of surveys of viewers immediately post-viewing the film, the research answered the following questions:

How is nature, Yellowstone National Park, and the National Park System represented in this large format film?

Where does the large format presentation of nature and the national parks fall in the continuum of representations of nature?

How are nature, the Yellowstone National Park, and the National Park System presented and “constructed” in large format in consequence of the medium itself and through the medium’s relationship as a “truth” format aligned with museums, science centers and historical sites?

Analyzing production.

In considering the role of production in meaning-making, a political economy analysis was used. Although cultural studies scholars have debated the impact of political economy (Garnham, 1995; Grossberg, 1995) its use here is in line with political economy analyses of the film industry by Balio (1976 a, b; 1985), Garnham (1990), Prindle (1993).and Wasko (1982, 2001). By examining the social, political and economic contexts of production, these analyses critique how film reproduces power structures (Wasko, 1999).

Political economy focuses on the “interplay between the symbolic and economic dimensions of public communications” (Golding & Murdock, 1991, 15) in order to demonstrate how economic factors such as financing and production impact the kinds of texts that can be produced, potential limitations within the

texts as to what can or cannot be said, representations within the texts, the limits of possible ideological discourses and effects, and indicate the kinds of reception the text will produce in the audience (Gitlin, 1980; Golding & Murdock, 1991; Kellner, 2002). In short, political economy considers how institutional structures and external relationships can shape the form and content of cultural commodities (Meehan, Mosco & Wasko, 1993).

Political economy assumes that every text has some use-value—that texts are produced to satisfy some need of the producer. Considering the relationship of production/distribution/consumption can help elucidate the balance of power that results in cultural texts. Communications scholar Lawrence Grossberg (1992, 94) noted:

By separating structure and power it creates the illusion that one can escape them. But such fantasies merely occlude the more pressing task of finding ways to distinguish between, evaluate and challenge specific structures and organizations of power.

For this study, political economy was defined as the economy of “conditions of existence” (Hall, 1996, 258) where consumption is mediated through determinate conditions of production. The most complete political economic analysis will consider the broadest range of factors that can affect the production and subsequent consumption of texts (Meehan, Mosco & Wasko, 1993), such as audience ratings, financing, institutional or political constraints or issues of distribution (Harry, 2005). My research focused on funding streams and institutional relationships. As key issues in the large format industry (see Chapter 2, also Wasson, 2007; Wollen, 2003) they serve as constitutive factors in the construction of the final text. Texts used in this analysis included an e-mail

interview with the film's director and writer Kieth Merrill (Appendix A), a report from the Richard Ivey School of Business, *IMAX: Larger than Life* (Nair, 2009); the Giant Screen Theater Association *Economic Impact Study* (Shindler & Shindler, 2001), articles from the Giant Screen Cinema Association publication *The Big Frame* (Anonymous, 1992; Wichmann, 1989), publicly available information on distribution and licensing of the film from the film's production and distribution company Destination Cinemas Inc., and various newspaper articles reviewing the film (Carey, 1996; Parks, 1994). Questions asked in the analysis of these texts were:

When was it made?
 Where was it made?
 Who made it?
 How much did it cost?
 Who financed the film?
 (adapted from Rose, 2005).

Analyzing the text.

A close analysis of a film (Crowther, 1997; Fursich, 2002) is predicated on the assumption that the specific technological characteristics of a film combine with the content of the film to make the film function in a way that is not duplicated by any other media (Petric, 1975). Analyzing film through close reading acknowledges that the meaning generated by these films is indebted to the characteristics of the medium. Cinematic values associated with the mise en scene¹⁷-- such as camera angle, movement, lighting, editing, sound, and framing

¹⁷ Robert Kolker (2005) defines film mise en scene as everything that goes into the composition of the shot, which includes camera movement, sound, lighting, set design.

etc--can alter or carry meaning beyond that of the film's content (Lancioni, 1996; Mulvey, 1977/8), as

Camera use (placement angle, distance, movement, framing, and focus) like other technical codes can be specified by the director in order to achieve desired effects. A close-up, for example, may be used to represent intimacy on one hand or to reveal anxiety by emphasizing a person's furrowed brow or tears. Lighting changes the way we look at people by the way it is placed, for example, to create shadows across a person's face or to provide a certain color for special effects. Editing is a powerful way to provide continuity when none exists or to transform time, interaction and other elements and rhythms (O'Donnell, 2005, 530-531).

As large format films are defined by specific film structures due to strict capture and display requirements, close reading offers a way to consider how these characteristics impact meaning generation.

This close analysis of the *Yellowstone* combined a shot by shot analysis (Ellsworth, 1987; Petric, 1975; Rose, 2004) with textual analysis to address specific questions as to how nature and the national parks are represented in large format. Given that meaning is contextual (Seiter, 1992) the shot by shot analysis was critical to explicating the structural characteristics which affect the viewer's possible response to the film(s) content, while the textual analysis complemented the shot analysis by analyzing the rhetoric used to describe nature, the National Park System, and Yellowstone National Park.

A close analysis is used to "gather information about how other human beings make sense of the world... to make an educated guess at the most likely interpretations that can be made of that text" (McKee, 2003, 1) by looking for recurring patterns, textual emphases, striking imagery, tone or moments of significance within the text, although such an analysis is predicated on the fact

that audiences can read texts in a variety of ways (Creeber, 2006). As a result, the results of the analysis are

less a matter of exhaustiveness than of strategy—the recognition, say, that a detail which might initially appear insignificant provides a perspective from which other seemingly insignificant details suddenly emerge in another kind of coherence, or that within the large oppositions that form the overall structure of the film, there is nonetheless a pressure, a sense of something always at the horizon or on the edge of the opposition (Mayne, 1993, 108-9).

The close reading drew heavily upon and extended rhetoric of science scholar Joanne Ploeger's 2004 analysis of the film *Yellowstone*, extending her analysis by considering how the text represents nature, the National Park System and Yellowstone Park. Questions asked in the analysis were:

What is being shown/discussed?
How has the technology affected the image?

The film was examined for major content themes, which were defined as Yellowstone history, Yellowstone nature and Yellowstone science, categories which were also consistent with materials associated with the film. Chapter headings in the DVD menu were “Indigenous Man, Indigenous Lands”; “Pioneers”; “Yellowstone Becomes a National Park”; “A Geological Treasure”; “Old Faithful”; and “Forever Wild”. Press releases from the film's premiere¹⁸ also focused on the history of the park (“Yellowstone: An IMAX®/OMNIMAX®¹⁹ Adventure for the Benefit and Enjoyment of the People”), Yellowstone nature (“A Walk on the Wild Side: Yellowstone's Hometown Residents featured in

¹⁸ The press releases were included in a packet of materials obtained from Destination Cinemas (1994).

¹⁹ OMNIMAX® refers to the dome theatre version of IMAX®. Now known as IMAX® Dome, this format uses the same projector system with a fisheye lens which wraps the image 180 degrees horizontally, 100 degrees above the horizon and 22 degrees below the horizon for a viewer at the center of the dome. In these theatres the projector is mounted in the middle of the seating area.

IMAX®/OMNIMAX® Film”), and Yellowstone science (“Travel Inside Old Faithful: Amazing Footage in Yellowstone IMAX®/OMNIMAX® Film”; “Nature’s Wonderland: The Geology of Yellowstone Featured in IMAX®/OMNIMAX® Film”). These categories were then used in the analysis of the film structure and the audience surveys.

In the shot by shot analysis the unit of measurement was the individual shot (Rose, 2004), defined as a single continuous image uninterrupted by editing or cuts. Structural features examined included average shot length (ASL), shot type, camera movement and camera angle. Shorter ASLs result in faster pacing and greater dynamism, longer ASLs in slower pacing and greater drama. Film scholar David Bordwell (2006) found that average shot length in feature Hollywood films has declined from 8-11 seconds between 1930 and 1960 to 3-6 seconds today around 2000. Bordwell (ibid) also noted that short ASLs cross all genres, and can now be found not only in action films (*Armageddon*, 1998; 2.3 seconds), but also in dramatic films (*Love Actually*; 2003; 3.8 seconds) and animated films *Monsters Inc.*, 2001, 3 seconds).

Calculating the ASL for large format films showed that *Destiny in Space* (1994) had an ASL of 21.2 seconds, *Blue Planet* (1990) 19.1 seconds, *Alaska: Spirit of the Wild* (1997) 7.3 seconds, *NASCAR 3-D: The IMAX Experience* (2004) 6.0 seconds (Crosby, 2007), and *Polar Express* (2004) approximately 7 seconds (Umble, 2008). The DMR (Digital Media Remastering where 35 mm films are converted into large format) versions of *Dark Knight* (2008) and *Transformers: Revenge of the Fallen* (2009) had ASLs of 3.1 and 3.4 seconds

(Cinematics, 2010). In *Yellowstone*, the ASL was determined by counting the total number of shots (179; title and end credits were counted as one shot each) and dividing by the length of the film (32 minutes) to yield an ASL of 10.7 seconds.

Selection of the features shot type, camera movement and camera angle was based on their being limiting factors of the large format medium as discussed in Chapter 2, as well as the fact that these characteristics have been implicated in effects on perception, affect, memory (Bolls, Muehling & Yoon, 2003; Lang et al., 2000; Suzuki & Osada, 2002), and the creation of the subject position (Baudry, 1970; Mulvey, 1975), all of which are involved in meaning-making. The film was transcribed (Appendix B) and representative film sequences (Appendix C) from each of the categories identified in the initial content analysis of the film as defined above were selected for the shot by shot analysis. For each sequence the shot type, camera movement, and camera angle were noted.

Shot types are defined by distance of the camera from the subject. For this analysis, shots were coded as extreme long shot, medium long shot, medium shot, and close up. In the extreme long shot the background dominates and human figures are barely visible or visible only in the distance. In a medium long shot the entire human figure is shown in near or middle ground of the frame. In the medium shot, human figures are shown from the waist up. A close up focuses on heads, hands, feet or small objects (Bordwell & Thompson, 2001).

Camera movement is the apparent movement of the image, which can be accomplished by turning the camera, moving it on a dolly platform or physically by the camera operator. The camera movements were identified as pan, tilt, or tracking shots. In a pan shot the camera is rotate on the vertical axis. The tilt shot is when the camera is moved on the horizontal axis. A tracking shot is a change in position of the camera along the ground (Bordwell & Thompson, 2001).

Camera angle refers to the framing of the image. Although there are an infinite number of points in space in which the camera can be positioned, the camera angle tends to be organized as high angle, low angle and straight on angle (Bordwell & Thompson, 2001). A high angle looks down at the focal point and diminishes the subject, a low angle looks up at the focal point and makes the subject look dominant, and a straight on angle is a neutral frame.

Analyzing reception.

Reception studies are predicated on the belief that texts acquire meaning at the moment of reception through the active decoding of content based on the social and cultural position of the audience (Morley, 1980; Tuchman, 1994). The context and the manner in which the viewer is addressed is of political importance (Nichols, 1991) in analyzing cultural texts, as meaning making is contingent on the “articulation between viewer and viewed, between the power of the image to signify and the viewer’s capacity to interpret meaning” (Evans & Hall, 1999, 4). And as texts are consumed—written, viewed etc.—within a

specific social context as a result of particular conditions of production (Storey, 2003) any evaluation of a text in terms of ideology must take into consideration not only the text itself, but also its means of consumption.

The premise of a culturalist approach (McRobbie, 1991) to reception analysis is that meaning is generated in the process of “consuming” the text, the subsequent active interpretation of the texts from interpretation through the viewer’s specific social and cultural positions (Kellner, 2002; Tuchman, 1994), through social interaction with others, and through the context in which the text is consumed (Barbatsis, 2005; van Zoonen, 1994). As Christine Gledhill (1988, 246) wrote,

The viewing or reading situation affects the meanings and pleasures of a work by introducing into the cultural exchange a range of determinations, potentially resistant or contradictory, arising from the differential social and cultural constitution of readers or viewers—by class, gender, race, age, personal history and so on.

These individual meanings are then disseminated and further interpreted through social interaction with others which generates the interpretive framework by which meaning is constructed (Fish, 1980). In this way, meaning making is generated through codes of understanding (Jensen, 1987) where shared experiences and interests serve to unify the audiencing of a text.

Texts also generate meaning through the way in which the audience is positioned. For visual texts, media educator Len Masterman (1985) showed that the direction of the discourse, the mode of address, its setting and its format generated a social space for the viewer. For example, camera placement was shown to anchor the viewer’s image in that of a character within the text

(Flitterman-Lewis, 1992), or as a viewer outside the filmic space (Kuhn, 1985). Narrators or characters who spoke directly to the audience generated the sense of the viewer as spectator and as expert (Nichols, 1976/77).

Following Rutgers University Institutional Review Board approval (E06-434), audience responses to *Yellowstone* were gathered using a cross-sectional questionnaire of the film audience at the Yellowstone IMAX Theater post-viewing over one week in July 2006. Open-ended questions (Appendix C) were asked to obtain subjective access to film-going practices as well as opinions, thoughts or feelings about watching the film.

The Yellowstone IMAX was open from 9 am to 9 pm; *Yellowstone* was aired every two hours, beginning at 9 am with a final showing at 9 pm. Over the course of one week in the summer of 2006, beginning at 9 am every day and ending with the last showing at 9 pm participants were recruited at the ticket window. Guests purchasing tickets to the film *Yellowstone* were given a card asking for their participation in a survey about the film they just saw. All film viewers over 18 were eligible to complete the survey. By the end of the week a total of 57 surveys were completed. Results were collated in Excel for analysis.

Questions asked in the analysis of the data were:

Who are the audience[s] for this film?
 How are these audiences different from one another in terms of gender, and race?
 Where is the spectator positioned in relation to the image and what relation does this produce between the image and the spectator?
 What knowledges could the viewer take from the film?
 How actively does the audience engage with the image?
 (adapted from O'Donnell, 2005 and Rose, 2004)

Chapter 4. Analyzing Production, Text and Audience: Results

Production

The large format industry has been in flux since the first theater was built in 1971 to the more than 400 theaters that exist today, due to changes in technology and in the mix of producers, distributors and exhibitors entering and exiting the industry. This means that there has been no one model that has controlled the production of these films over the industry's existence, although "The basic economic model upon which the industry originated and for the most part continues to dominate today, is based on the early work done with the not for profit institutional sector" (Shindler & Shindler, 2001).

The large format industry consists of several large organizations and multiple small to medium sized independent companies that are involved in various aspects of the industry (film stock, production, distribution, exhibition, etc.). The major corporation involved in the industry in 1994 (the year of the release of *Yellowstone*) was the IMAX Corporation. Founded in 1967, the IMAX Corporation was bought by the WGIM Acquisition Corporation in 1994 for approximately \$100 million and later that year became a public corporation.

Then and today, IMAX

is the pioneer and leader of giant-screen, large-format film entertainment, as well as the industry leader in the creation and production of high-end rides and attractions. Successful products include IMAX Simulator Rides and IMAX Ridefilm Systems. These breakthrough innovations combine IMAX projection technology with sophisticated motion programming and digital sound to create a truly unique and captivating experience (International Directory of Company Histories, 1999).

In 1994 there were 124 large format theaters worldwide, up from 109 theatres in 1993; that number would climb to 136 in 1995 and ten years later would top over 200 theatres (Anonymous, 1992). The industry has tended to be a buyer's market (Nair, 2009) with theaters selecting films that complement their mission. The relationship between producer and exhibitor can be contentious at times, with exhibitors driving changes in film content and focus. These interactions are focused through the industry association, the Giant Screen Theater Association and its two annual meetings in spring and fall of each year.

Large format films are leased from distribution companies (which may or may not be the same organization that produced the film) by the theatres that negotiate individually for each film. There is no standard lease structure, and final lease costs are based on a number of variables, including length of film, size of theatre, amount of time film has been in the marketplace, film theme and quality of the film. In 2001, the typical leasing model included a lease fee paid to the producer/distributor in the range of 15-20% of the box office revenues (Shindler & Shindler, 2001). Unlike Hollywood films with marketing costs of 30-50% of the total cost of production and distribution of the movie (Nair, 2009), marketing of large format films is absorbed primarily by the exhibitor.

Additionally, a projection of the box office revenues (based on ticket price and projected box office attendance) is used by lease negotiators to evaluate how film revenues will be divided between the distributor and the theatre. Payment tends to use a percentage plus flat fee, which can vary from the low teens to 35%. Mark Katz, then a film distributor representative for IMAX Systems

Corporation commented that “The average for a traditional licensing of a film, six months fulltime, is in the 25 percent range” (Wichmann,1989). The success of the film in the box office is critical to both distributor and exhibitor. However, it is the exhibitor who suffers if the film does not meet projected numbers, as they must still meet the agreed upon percentages. Therefore, careful estimation of box office sales are critical to the exhibitor.

It typically costs \$4-5 million dollars to produce a large format film (2D) (Michael, 1998). Film financing historically has been provided by a number of sources such as the National Science Foundation which provided \$20.5 million dollars for sixteen projects in the 1990's (Kass, 2000). Corporate sponsorships, equity financing, tax incentives, pre-lease financing (where the theatre agrees to lease the film for a specified time and rate which can then be used for collateral bank funding) are other funding strategies (Nair, 2009).

Very few large format films earn a profit for their producers. In some cases, such as with corporate sponsorships, costs can be written off as marketing expenses, or when funding is obtained from educational and scientific foundations (such as the National Science Foundation mentioned above) as program expenses (Nair, 2009). Ben Stassen (2003), large format filmmaker and president of nWave Productions wrote,

It is currently almost impossible for a producer to recoup the production budget from 15/70 exhibition of our films. For every million dollars spent, a film has to gross about \$7.5 million (if it's 2D) and \$5 million (for 3D) to break even.

Although the number of large format theaters has consistently increased since 1971 (thus providing more sites for possible leasing and display of a film), it

is important to consider that not all theatres are venues which can carry a specific film. Institutional theatres are found in a variety of venues, including science centers, science museums, technology museums, aquariums, zoos, and historical sites. As films are generally selected to support institutional mission (e.g., a historical venue would likely not show a science-based film), not every film will be considered for exhibition by every theatre. In 2001 industry executives calculated that the average film would be bookable in at most 100 theatres. Such a film would have to meet a wide range of acceptable criteria. As of 2000, only two large format films had been booked into more than 100 theatres (Shindler & Shindler, 2001).

Additionally, prior to digital large format (and even to this day, as digital large format requires retrofitting the theaters to project digital images, a cost which many theaters cannot afford; and the digital large format is still controversial in the industry, given that it is not considered equivalent in quality to capture and display with large format film cameras), it was impossible to have a single film showing throughout the day due to technological limitations. Large format films require approximately 20-30 minutes for rewinding; as theaters must pay for the print they are leasing (print prices range from \$15-16,000 and up; Wichmann, 1989) they typically only purchase one copy. Therefore, theaters would have to purchase two prints of the same film in order to show the film continuously through the day.

The large format film *Yellowstone* premiered June 15, 1994 in the newly opened Yellowstone IMAX Theatre in West Yellowstone, Montana. The film was

produced by Destination Cinemas Inc., a “pioneer in the destination theater industry [which] continues to develop innovative ways for tourism venues around the world to drive traffic, enhance the visitor experience, stimulate greater visitor satisfaction, and improve profitability” (Destination Cinemas Inc., undated). In 1994, Destination Cinemas had four operating theaters and two in development, making it the “largest owner/operator of large format theatres in the world” (Destination Cinemas Inc., 1994).

Yellowstone was co-produced by Richard W. James, then President and CEO of Destination Cinema Inc., and Kieth Merrill, who was also the writer and director. Film rights are owned by Destination Cinemas Inc. who declined to provide the film transcript or financial information, limiting the discussion here to publicly available information and an email interview with Kieth Merrill in February 2008 (Appendix A).

The film was shot over a span of about seven weeks in Yellowstone National Park, divided between summer, fall and winter (Parks, 1994). The film cost \$6 million dollars to make and was funded by private investment (Appendix A). In response to the question “How was the film funded?” Mr. Merrill referenced Destination Cinema’s role in the film as,

The film was funded by a company that specialized in these kinds of projects. It was in a fact a company that grew out of my *Grand Canyon* film project. They were the financial backers of my *Grand Canyon* IMAX project and that project was so successful that they formalized the funding into a company and went on to finance and operate several other similar venues.

He went on to discuss the concept behind the film in terms of a reality accessible near the theatre:

The concept behind the *Yellowstone* film was in fact an entirely new concept for large format cinema that I developed in creating the first of my IMAX films, also at a National Park, *Grand Canyon: The Hidden Secrets*. The idea is simple. People travel from around the world to visit these places--to visit Yellowstone National Park, but when they get there they realize they have allowed two days and it is virtually impossible to see it all, experience the vast changes wrought by each season, encounter the wildlife, or get any sense of the history--the people, places and events--that happened in the very spot they may be standing. So my goal with *Yellowstone* --as in all of my IMAX films--was to extend the visitors experience into realms not otherwise accessible to them.

Mr. Merrill noted that there were no sponsors for the film, as it was a “private enterprise with private investment.” However, he did comment that he remembered an “alliance of IMAX theatres or an association of some sort made up of owners, operators or managers of IMAX theatres who had a financial stake in the film” who had enough clout to force changes to the film that were revisionist in terms of history and impacted the flow of the movie. Interestingly, while Mr. Merrill commented in the interview that the National Park Service was cooperative in his making of the film, in an article in the *Houston Chronicle* (Parks, 1994) he was quoted as saying “The representatives of the park made it clear they did not want the film made...but they cooperated to make it go smoothly, with the least disruption to the park and visitors.”

Since the release of *Yellowstone* in 1994 there have been a total of 61 leases (from 1994 to 2005) for the film (Destination Cinemas Inc., undated). Similar to *Grand Canyon: The Hidden Secrets*, another Destination Cinema film (which has been shown at the Grand Canyon IMAX/National Geographic Visitor Center for more than 25 years), *Yellowstone* has been in continual play outside its eponymous national park since its premiere in 1994.

Text

In her 2004 paper “Techno-scientific spectacle: The rhetoric of IMAX in the contemporary science museum”, the late rhetorician Joanna Ploeger wrote large format films “centrality to museum experiences indicates the dominance of market-driven and entertainment-based ideologies in the design and administration of science education” (73-74). In her rhetorical analysis of *Yellowstone*, she argues that large format films

provide many egregious examples of scientism and its close relationship to the ideologies of colonialism that transform natural systems and native cultures into objects for control by science. These films position viewers as passive voyeurs of worlds constructed through science (80).

Ploeger points out that in *Yellowstone*, as well as in other large format films, science and technology is represented as a means of conquering and controlling nature. Framed through discourses of progress and exploration, she discusses that the history of Yellowstone National Park is portrayed as a linear evolution from primitivism to scientific control. In consequence, science is presented as achievement rather than complicated practice.

Yellowstone presents both historical and scientific narratives about Yellowstone National Park. According to Ploeger, as a representative of the most common type of large format film which are natural history films, *Yellowstone* positions the viewer as a passive voyeur of a scientifically-constructed world. Combining the myth of Western expansion with Native American and scientific understandings of nature, the film reinforces the Western perspective of human agency over nature, marking as inferior Native American relations with nature. The early focus in the film on peaceful interactions

between the Native Americans living in Yellowstone, European traders and explorers (eliding the forced removal of Native Americans from the region (Colchester, 2004; Keller & Turek, 1998; Kemf, 1993) and the reconceptualization of the space as pristine and unpeopled; Coates, 1998) transitions to an emphasis on scientific dominance of nature and land value through exploitation of its resources.

In the film, a discussion of preservation of the land “for all people” through its establishment as a national park marks, for Ploeger, the boundary between the relationship between humans and nature, between Native American management of the land through “experiential and intuitive understanding” (84) and “a human transcendence of physical and intellectual boundaries through technological devices” (85). Progressive technology—from snowshoes to rafts to GPS to thermal probes to measure geothermal activity—both facilitates the human presence in Yellowstone and allows access to places inaccessible (a “picture postcard of the park”; 87). This emphasis on inaccessibility and enhanced vision in the film (especially through the technologies that allow the scientist to see below the earth’s surface) is suggestive to Ploeger of the role of the scientific gaze and technology in changing the human relationship with Yellowstone.

As an extension of Western expansion mythology, *Yellowstone*, like other large format films, reinforces an ideology of human control over nature. Ploeger notes that the technological capabilities of large format, such as the physiological response of vertigo and spatial disorientation resulting from camera movement

within the large images, reinforce the scientific gaze. Whether it is the large format aerial photography with its swoops and glides, or the computer simulation of the GPS system for identifying pre-history volcanic explosions within the park, the “Spectacular array of technologically produced images does little to bring audiences close to nature and, instead, serves to reinforce the separation between humans and nature” (88).

For Ploeger, the film predicates a techno-scientific relationship with nature, wherein nature is something for us to control. The creation and preservation of Yellowstone was as a resource for scientific study, obscuring humanity’s responsibility towards nature. This oversimplification of the links between humans and nature through a scientific lens is a consequence of emphasizing spectacle over engagement in large format and results from “how monetary concerns drive the production and consumption of IMAX films” (90).

In this analysis of how both filmic structure and content impact meaning, it was apparent from a close reading of the film (Appendix B), along with an examination of materials associated with the film (press releases from the film release), that in line with Joanna Ploeger, *Yellowstone* focused on content relating to history, nature and science. A closer examination of sequences that corresponded to each of these themes supported Ploeger’s analysis that the film segued from primitivism to technology in conceptualizing the park and its relationship with Native Americans, explorers and scientists (Appendix C). The film celebrated the foresight of early proponents of creating the Yellowstone region as well as the technological innovations that are used to understand and

explain nature through the “conqueror’s omniscient view” (Hayward & Wollen, 1993). The role of the native peoples who inhabited Yellowstone, their interaction with the land is minimized or ignored: “Hunt's party finally reached the Columbia River. They deemed the west unfit for habitation. Unexplored and undiscovered, the Yellowstone plateau returned to solitude”²⁰ (Appendix B.).

Incorporating an analysis of the filmic choices made by the director in creating this film, I found that in contrast to Ploeger’s emphasis on the film presenting an ideology of human control over nature through techno-scientific development, the film instead portrays an ideology of human responsibility for nature through nature as sublime experience: separate, isolated and distinct from humanity, and in many ways, unknowable: “For a brief moment we peer into the windows of our earth, but some secrets can never be known”, “entered into the unknown”, “legends of a mysterious plateau”, “curious wonders”, “hidden by legends and shrouded in myth”, “some things are forever wild”, and “A creation greater than we understand embracing God and man and stars in heaven” (Appendix B).

Scientific and technological developments are shown to be tools to help humanity preserve and understand nature such as during the film when Dr. Susan Kieffer discusses the use of a thermal probe to image inside Old Faithful: “Old Faithful is the most famous geyser in the world. Curiously we know very little about it or why it erupts with such predictable regularity. I wanted to learn what happens between eruptions.” Ultimately, however, science is represented as only being able to yield tantalizing glimpses of understanding, “For a brief

²⁰ Note that all quotations from the film can be found in Appendix B.

moment we peer into the windows of our earth but some secrets can never be known” (Appendix B). Instead, nature remains inviolate and unchanging: “Yellowstone was born in chaos, but chaos has not ended. The ancient story is not ended. For a brief moment we peer into the windows of our earth but some secrets can never be known. This much is certain: the upheaval will come again. Some things are forever wild” (Appendix B).

Like other large format films both before and after it (Ross, 1994), *Yellowstone* represents nature as a consequence of human intervention that has left little mark on the landscape. It portrays the intrusion of white man as necessary for the change in perceptions of wilderness: a “hideous place of wild beasts and wild men became a place of beauty, a retreat, a sanctuary of nature” (Appendix B). The film presents a rarefied vision of thoughtful humanity recognizing Yellowstone as sacred (“It is a curious connecting place of nature, man and creation”; Appendix B.) and unique (“It is as if nature has chosen this place to display her most curious handiwork”; Appendix B.), centering the before and the after of the narrative about the creation of the national park in the role of Father Francis Kuppens: “But Kuppens was a man devoted to God. When he described what he'd seen, men listened in a different way. The serious exploration of Yellowstone began” (Appendix B).

However, in *Yellowstone*, representations of nature and Yellowstone are the result not only of the narrative content, but also of the editing choices—type of shot, camera movement, length of shot etc.—which impact meaning-making by altering the relationship of the viewer to the images. The consistent use of

long and medium shots and longer shot lengths maintains the perception of separation between humanity and nature. The average shot length of *Yellowstone* was 10.7 seconds, about midway between the longest and shortest calculated large format film ASLs *Destiny in Space* (1994) at 21.2 seconds and *NASCAR 3-D: The IMAX Experience* (2004) at 6.0 seconds (Crosby, 2007). These two films are representative of what can be defined as sub-genres of large format films: the space film and the action film.

Represented throughout the film as a sublime visual spectacle and experience, the “picture postcard” noted by Ploeger (2004, 87), the awe of sublime nature is created through the use of tracking shots which create the extreme experience, simultaneous wonder, astonishment, and fear of the classic sublime (Wasson, 2007; Whitney, 2005). These feelings of vertigo and disorientation mimic the disorienting or overwhelming experience both Edmund Burke and Immanuel Kant understood as an experience of the sublime (Higg, 1999). Bookending shifts in the films’ narrative; they serve as spatial and temporal changes agents and serve to position the narrative as extensions of the sublime.

In contrast to the regular use of close up shots in nature films decried by Bouse (1981), Turnbull (1981), and Corbett (2006) as misrepresenting acceptable distances from wildlife, in *Yellowstone* nature is presented primarily through the use of long shots which distance the contact between the viewer and the image. As functions of limitations of the large format medium the consistent use of these longer shots, the longer shot length, and the lack of typical editing

conventions which are used to construct identification with character or action (Wollen, 1993) establishes nature as separate from humanity.

As further emphasis, narration is minimal in the moments of presenting nature (and much richer in scenes depicting scientific enquiry). In shot sequence 69-81 (Appendix C) which is accompanied by only a single line of narration, “The elk, the bison and the bear reclaimed their quiet kingdom”, as well as in sequences of shots of geysers and landscapes, the images are accompanied only by the sounds of howling, splashing and stampeding feet etc. as appropriate to the images. Nature becomes reduced to the visual, and it is only through vision that nature can be understood. As sublime imagery, the film seems to say that everything we need to know about nature is contained with the experience of vision.

Audiencing *Yellowstone*

Literally just a block away from the boundary of the Yellowstone National Park in West Yellowstone, Montana is the Yellowstone IMAX Theatre. During the summer months, the population swells with the influx of tourists headed through the busiest entrance into Yellowstone National Park²¹. The tourists who have not entered the park can spend time browsing the shops and visiting the local attractions such as the Yellowstone Historic Center Museum located in the Union Pacific Depot, and the Grizzly and Wolf Discovery Center; or participating

²¹ In 2006 there were approximately 3 million visitors to Yellowstone. Of the approximately 740,000 visited in July (National Park Service, 2010a) 310,000 entered through the West Yellowstone gateway (National Park Service, 2010b)

in the myriad of outdoor recreational activities available, such as fishing, hiking and camping. Although sightseeing was the primary reason to visit Yellowstone, for most visitors “Yellowstone was not a destination point for them, but only one attraction on a western tour” (Bath, 1994, 15).

In summer 2006, visitors to West Yellowstone also had the option to watch the large format film *Yellowstone*, which was screened every other hour beginning at 9 am until the last showing at 9 pm. As the website for the theatre says, “Until you’ve been to Yellowstone IMAX Theatre, you haven’t had the complete Yellowstone experience” (Yellowstone IMAX Theatre, 2009). Over the course of one week in the summer of 2006, beginning at 9 am every day and ending with the last showing at 9 pm, viewers of *Yellowstone* were invited to participate in a survey asking them what they thought of the film. All viewers over the age of 18 were eligible to participate.

A total of 57 viewers completed the survey. To understand how the film *Yellowstone* was received by the audience, the survey asked a variety of open-ended questions about the Yellowstone National Park, responses to the film *Yellowstone*, perceptions of the large film format, and take away messages from the film (Appendix D). Viewers were also asked a series of questions to identify whether there were any significant differences in the demographics of the participants which might impact interpretation of the film.

The audience tended to be relatively homogenous in terms of ethnicity and cultural background (where they grew up and where they currently lived) and was representative of the typical summer visitor to Yellowstone, who is white

(National Parks Conservation Association, 2009), 18 years or older, and lives in the western United States (Oschell, 2009). The majority of participants in this study who responded to the question identified their ethnicity as white (91%). Most of the participants grew up (51%) and currently live in the western United States (61%) (Table 1).

Age wise, the population skewed older. Younger viewers and viewers with families tended to decline participation in the survey, often saying they were on their way to the park and did not have time. Many of the older participants were traveling with grandchildren and were happy to complete the survey while the children looked in the gift shop which was outside the exit to the theater. The average age of all participants was 54 years, the range 30 to 93 years. In terms of gender, there were slightly more women than men (33, 21), a gender bias common in survey participation (Curtin et al., 2000; Moore & Tarnai, 2002; Singer et. al., 2000). The women ranged in age from 31 to 93 years (average age 53) and the men from 30 to 77 years (average age 56) (Table 1).

Questions on association membership and viewing habits were asked in order to provide some context of the viewers' connections to nature concerns. Very few indicated that they were members in conservation associations (this is assuming that membership would be indicative of pro-environment/conservation beliefs). When asked whether they belonged to any of the nature-based associations Sierra Club, Nature Conservancy, Greenpeace or the National Wildlife Federation, or others not listed, a quarter (25%) indicated that they belonged to one or more such associations. Of these, only nine (9%) percent

belonged to one of the named organizations. The remainder belonged to the named organization and at least one other organization, including Ducks Unlimited, Rocky Mountain Elk Foundation, Yellowstone Association, Yosemite Association, League of Conservation Voters, Southern Oregon Land Conservancy, World Wildlife Foundation, Utah Rivers, Southern Utah Wilderness Alliance, Mule Deer Foundation, and the National Rifle Association. The majority (68%) indicated that they watched *Discovery Channel* more than once a week. About half of the participants watched *National Geographic* (47%) or movies on DVD (44%) more than once a week, while few reported that they regularly watched *Animal Planet* or *Travel Channel* (28%; 30%) (Table 2).

A series of open-ended questions about Yellowstone National Park established the participants' interests in visiting the park as well as the main images that they held about the park. When asked what they liked about visiting Yellowstone and the national parks, the majority (51%) responded that both the visual experience of the park (sightseeing, scenery, beauty) and the wildlife (51%) were key factors in their interest in visiting the park (note that numbers may not add up to 100 as respondents may have provided multiple answers). Several comments focused on the seeming lack of human involvement in the evolution of the park: "lack of civilization, I like going off season when there are relatively few people around", "God's beauty and handiwork", "most unique expression of the powers of nature", "seeing the earth's evolution w/out buildings and cities", "everything is left in a natural state" (Table 3).

Of the respondents, only seven (7%) percent indicated that active experiences such as hiking were what they liked about visiting the park. When asked more specifically what they like to do when they visiting Yellowstone, this number increased to forty-four (44%) percent, with respondents indicating that they liked to hike, fish, camp, ride motorcycles and drive when visiting Yellowstone. The majority of respondents (70%) noted that they liked to participate in some visual experience when they visited Yellowstone, whether it be watching wildlife, seeing Old Faithful, taking photographs, or “watch[ing] geysers, mudpots, fumaroles, hot springs, and other geothermal features.” These geologic features of Yellowstone were noted as the primary image (84%) that came to mind when thinking about the national park, with Old Faithful (“Old Faithful, impending geological disaster with next super eruption of volcano”) as an iconic image for sixty-three (63%) of the participants. Wildlife such as bears, elk, and bison were images that came to mind when thinking of Yellowstone for forty-seven (47%) of the respondents (Table 3).

Participants were asked a series of open-ended questions about their perceptions of and previous experience with large format (IMAX²²) films, along with specific questions about the current experience of watching *Yellowstone*. Eight-eight (88%) had seen large format films before watching *Yellowstone*. Of these, the majority had seen up to five large format films (68%). Nineteen (19%) had seen six or more large format films (Table 4). This drop off is consistent with previous research which points to a drop off in viewership after seeing two to

²² The more familiar phrase (for the public) IMAX was used in the survey.

three films where “in general, as viewers see more films, their enjoyment of the films decreases” (Kennedy, 2004, 38).

Thirty nine (68%) of the participants were able to recall titles of films they had seen. Almost half of those who remembered film titles had seen other eponymous films associated with national parks (*Zion, Grand Canyon*), while the majority of responses (81%) mentioned films associated with tourist or national sites, such as Yosemite, Cape Canaveral, Alamo, Everest, Mount St. Helens, Hearst Castle and Ozarks. Rather than provide specific titles of films, almost half of those who answered this question wrote down themes or focus of the film, such as space exploration with Tom Hanks, immigration to the New World, Huntsville, Alabama space film; or King Tut (Table 4).

When asked to describe the differences in the experience of watching IMAX films versus regular films, the majority of respondents (53%) commented that it was the experience of being pulled into the film or becoming part of the film action, described as “size of screen really ‘takes you in’ to the environment”, “greater physical involvement”, “you seem like you are a part of the film and adventure”, and “the images make you feel like part of the experience.” The images themselves and the screen size were noted as the differences between large format and regular films by twenty-six (26%) of the respondents, while fourteen (21%) percent noted that large format differed from regular film in its emphasis on content (“the educational effect of the movie”), reality, importance (“IMAX films have a point!”) and providing an experience you cannot have in reality (Table 5).

Open-ended questions about *Yellowstone* were asked to understand viewers' perceptions of the film to consider what knowledges the viewer's took from the film. When asked why they chose to watch this film, most participants (53%) indicated it was because they wanted to learn more about Yellowstone. Comments ranged from general in tone, such as "wanted to learn more about Yellowstone", "to learn more and enjoy with grandchildren", or "to get an overview" to comments that linked the large format experience to information seeking, such as "wanted to see Yellowstone from another perspective", "to see what I can't", "interested to see the images the film would provide me", and "the IMAX experience and to learn about Yellowstone." Some viewers (16%) indicated that their primary reason to select the film was because of the large film format, commenting that "enjoyed previous IMAX films", "other IMAX are good", "loved past presentations", "because the Grand Canyon movie was so good", and "quality of picture." Other viewers (18%) indicated that they chose to watch the film because of family time: "to learn more and enjoy with grandchildren", "wife wanted to see it", "show my kids more about Yellowstone", "because we are going to the park tomorrow and we wanted to show the girls a preview" and "with my three daughters" (Table 6).

Asked what words they would use to describe the images of Yellowstone park in this film, the most commonly provided words were emotive words such as beautiful, awesome, amazing, breathtaking, magnificent, spectacular, sweeping, scenic, bold, and majestic. Less frequently listed were words such as historical, realistic, panoramic, impossible, informative, big and grand. Likely the emotive

words can be linked to affective sense of being pulled into the film, as ninety-six (96%) percent of the respondents felt like at one time or “all throughout” the film they became part of the action on the screen. This immersive quality was noted primarily at moments of camera movement, such as when flying or river rafting, a quality noted by one respondent who wrote “especially the parts when the camera was moving forward” (Table 6).

However, these action sequences were not the favorite part of the film for most viewers. Of the 49 participants who answered the question “what was your favorite part of the film *Yellowstone*?” only eighteen (18%) percent noted that the action sequences, such as flying or rafting, were their favorite part of the film. The majority (55%) preferred the nature and scenery sequences, while the discovery, history and science sequences were noted as the favorite parts for fourteen (14%) percent of the participants. Twelve (12%) percent commented that they did not have any single favorite part, with one individual noting that what they liked was “how impressive you portrayed the wonder of the creator” (Table 6).

The question “do you think the filmmaker had a particular point of view of nature, and if so, what it was?” and “what is your perspective on nature?” were asked to ascertain the viewer’s decoding of the films’ perspective on nature. Of the 50 responses to the question, forty-four (44%) percent felt that the filmmaker’s message was that nature should be preserved, that we should “preserve nature in its original form, similar for unique places, however managed” and that “nature should be left as is and not try to tame.” Thirty five (35%)

percent felt that the filmmaker's message was to show his appreciation and love for nature: "that nature is beautiful and wonderful" and "to show how enormous and awe-inspiring nature is." Nineteen (19%) percent of the respondents felt that the filmmaker perceived nature as a place of discovery and history, that "the mysteries and secrets have yet to be discovered. Its exciting!" and that "the filmmaker appreciates the natural environment and wants to leave it unchanged for future generations to see. He also wants to show how science can have an impact w/out destroying." Five respondents (5, 12%) wrote that the filmmaker linked nature to the sacred, commenting that "nature is sacred" and that nature was "created by God, not evolved" (Table 7).

To understand the impact of the film on viewer's perspectives and knowledge of nature and Yellowstone, participants were asked "After watching this film, how have your feelings about Yellowstone and the importance of preserving nature changed?" and "What did you learn about Yellowstone park from watching this film?" The majority of those who responded to the first question indicated their views on nature were unchanged (31 of 49; 63%). Twenty (20%) percent commented that their views on nature had been reinforced or enhanced, such that "I feel the same but with a stronger conviction." When asked what they learned about Yellowstone from watching the film, fifty one (51%) percent noted that they learned something about the history, discovery and exploration of Yellowstone. Twenty-six (26%) percent learned something about nature, in several cases referencing a need for preservation of the natural

world: “leave nature as is” and “keep things like they are let nature take over”
(Table 8).

Table 1. Audience survey demographics

Survey Number	Age	Gender	Ethnicity	Where grow up	Where live now
1	65	M	Canadian	Central British Colum	British Columbia
2	74	M	American	Texas	Kansas
3	43	F	White	Utah	Utah
4					
5	30	M	White	Wyoming	Montana
6					
7	32	F	White	New Mexico	New Mexico
8	57	F	White	Idaho	Texas
9	52	M	White	Wyoming	Wyoming
10	59	F	White	Montana	Montana
11	55	M	White	Montana	California
12	73	M		California	Oregon
13	64	F		California	Oregon
14	68	F	White	Oregon	Oregon
15	93	F		California	Oregon
16	56	M	White	Illinois	Maryland
17	45	F	White	Maryland	Maryland
18	44	M	White	Utah	Salt Lake City
19	44	F		California	Salt Lake City
20	53	F	White	Oregon	Oregon
21	46	M		Nevada	California
22	45	M		Ohio	Ohio
23	65	F	White	Illinois	Arizona
24	42	F		Montana	Montana
25	42	F	White	Louisiana	Louisiana
26	31	F	White	Indiana	Indiana
27	35	M		Indiana	Indiana

Note: Empty cells indicate no response.

Table 1. (continued).

Survey Number	Age	Gender	Ethnicity	Where grow up	Where live now
28	62	M	White	Indiana	Indiana
29	66	M	Hindu	India	India
30	73	F		US	California
31	36	F	White	Ohio	Colorado
32	30	M	White	Ohio	Colorado
33	32	F	White	North Dakota	New Mexico
34	59	F	White	Louisiana	Montana
35	35	F	White	Utah	Utah
36	45		Native Amer.	California	California
37	33	F	White	Utah	Utah
38	55	F	White	Texas	Texas
39	55	F	White	Texas	Texas
40	45	F	White	Idaho	Idaho
41		F	White	New York	New York/Florida
42	70	M	White	Iowa	Florida
43	68	F		Ohio	Florida
44	57	F	White	New Jersey	New Jersey
45	38	F	Hispanic	New Mexico	New Mexico
46	56	F		Pennsylvania	North Carolina
47	58	F	White	Ohio/Indiana	Texas
48	58	M	White	All over the world	California
M	64	M		Ohio	California
50	65	F	Hispanic	California	California
51	59	F	White	Pennsylvania	Pennsylvania
52	60	F	White	Idaho, Wy, Utah	Utah
53	62	M	White	Wyoming	Utah
54	77	M		Missouri	Missouri
55	66	F	White	California	Arizona
56	68	M	White	Utah	
57	41	M	White	Utah	Utah

Note: Empty cells indicate no response.

Table 2. Audience viewing habits.

Survey Number	Evening news	Discovery	National Geographic	Animal Planet	Travel Channel	Movies on DVD	Movies in the theater
1		x	x				
2	x	x				x	x
3	x				x		
4	x	x	x			x	
5	x	x	x		x	x	
6							
7							
8	x	x		x			
9	x						
10	x						
11		x	x				
12	x	x	x				
13	x	x	x	x			
14							
15	x		x				
16	x	x					
17	x	x	x		x		
18	x					x	
19							
20							
21		x	x		x		
22	x					x	
23	x	x	x	x	x	x	x
24	x	x	x	x	x		
25	x	x	x	x		x	x
26	x	x	x				
27	x						

Note: Empty cells indicate no response.

Table 2. (continued).

Survey Number	Evening news	Discovery	National Geographic	Animal Planet	Travel Channel	Movies on DVD	Movies in the theater
28	x						
29	x	x				x	x
30		x		x	x	x	
31	x	x	x	x			
32	x	x	x	x	x	x	
33	x	x		x		x	
34	x	x	x	x		x	x
35						x	
36	x						
37	x	x				x	
38	x	x	x		x	x	
39	x	x			x		
40	x	x		x	x		
41	x	x	x			x	
42	x	x	x	x	x	x	x
43		x	x	x	x	x	
44	x	x			x		
45	x	x				x	
46	x	x	x		x	x	
47	x	x			x	x	
48	x	x	x	x		x	x
49	x	x					
50	x	x	x		x	x	
51	x		x			x	
52	x	x	x	x		x	
53	x	x	x				
54	x						
55	x	x	x	x			
56	x	x					
57							

Note: Empty cells indicate no response.

Table 3. Viewer's attitudes about visiting and images of Yellowstone.

Survey Number	Like about visiting Yellowstone park	Like to do when visiting Yellowstone	Images of Yellowstone Park that come to mind
1	natural beauty	sightseeing	animals and geysers
2	I don't know yet, first time		
3	scenery, wildlife, visitor centers, hot spots, geysers, free to roam, inn	see everything	old faithful, rocky mtns, bears
4	hikes and sharing w/grandchildren	hike, flyfish	geysers
5	unspoiled	camp	mountains, geysers, springs
6	wildlife	take photos	Old Faithful, wildlife
7	seeing a beautiful wide open space that is mostly untouched	see the geysers, waterfalls	Old Faithful, waterfalls, animals
8			Old Faithful
9	scenery	stop and look	open land
10	scenery, animals, in winter	hike, walk trails, camp programs	Jehovah's wonderful creations
11	everything	everything	geyers and animals, beautiful scenery
12	seeing nature and geology preserved for the future	geysers, mud volcanoes, mammoth hot springs terraces	geyers, mud pots
13	geology, nature, animals	first visit-seeing as many of the geological features as possible	Old Faithful, impending geological disaster with next super eruption of volcano
14	nature and all the beauty	watch for animals and sightsee	geysers, animals, rivers, mountains etc
15	learn about nature	see the wonderful sights	rivers with waterfalls, very high cliffs, beautiful scenery
16	geology, environment	see the unusual sights	mountains
17	my first visit here	sightsee, hike	bears, mountains, geysers
18	mud pots	hike, search for new things	Old Faithful, Grand Canyon of Yellowstone
19	scenery, history, lack of civilization, I like going off season when there are relatively few people around	camp, visit well known sites, see wildlife	Old Faithful, elk, mud pots, y lake
20	everything, except the traffic	sightsee, hike	animals, geysers, waterfalls, sunsets, beautiful meadows, wildflowers, clouds, rivers, buffalo herds
21	seeing the natural beauty	hike and look for wildlife	grassy meadows surrounded by forests with rivers running down the middle
22	the beauty of nature	hike, fish, sightsee	streams, trees, steam
23	god's beauty and handiwork	look	falls, rivers, steam, animals
24	everything, education for my kids	see everything	
25	the beauty of nature, it is very clean and the animals	first time here, I would like to come back and camp	Old Faithful, waterfalls, animals
26	beauty of the park and animals	see the Grand Canyon of the Yellowstone	geysers and animals
27	wildlife, geysers	look for wildlife and look at geysers	it should be called geyser park
28	most unique expression of the powers of nature	Old Faithful	Old Faithful, Grand Canyon of Yellowstone, wildlife
29	an educational and a fascinating experience indeed	watch geysers, mudpots, fumaroles, hot springs, and other geothermal features	wonders of the volcanic region and the excitement of nature's feats

Note: Empty cells indicate no response.

Table 3. (continued).

Survey Number	Like about visiting Yellowstone park	Like to do when visiting Yellowstone park	Images of Yellowstone Park that come to mind
30	beautiful scenery and animals	sightsee	geysers, animals
31	scenery and animals	camp, hike, see points of interest	Old Faithful, paint pots
32	nature, landscapes, wildlife, opportunity for hiking, photography	camp,hike	a giant plateau of trees
33	the animals and geographical sights	look at all the wonderful sights at the park	bears and geysers
34	I love everything about y. I feel like I am returning to my roots when I am here the wildlife, the geothermal features and the beauty around me are incredible.	hike, both geysers trails and back country trails, view wildlife extensively, esp the wolves	wildlife, beautiful scenery and geothermal features
35	seeing animals in the wild, watching the kids experience new things	hike, watch for animals	Old Faithful, the canyon, elk and bison
36	the open land, wildlife, geysers	take picture, learn history	beauty, bison, bald eagles, indians
37	seeing the earths evolution w/out buildings and cities	hike to the geysers and mud pots, see wildlife	Old Faithful
38	nature, sightseeing	drive, fish	massive mountains, plains, water
39	the natural beauty	drive and look	Old Faithful, waterfalls
40	inforamtion and feeling of wonder	visit geologic wonders	geysers
41	natural surroundings, history of the area, wildlife	drive to see the sights and look for wildlife	natural scenery of great variety, wildlife
42	everything	hike, photograph	mountains, Old Faithful, water
43	the magnificent beauty. The animals in their natural surroundings	enjoy the serenity	bears and buffalo
44	I love nature-seeing animals and natural formations in the park	hike, walk, see various parts of Yellowstone, seeing the animals in their natural habitat	old faithful, geysers, animals
45	the beauty of nature and how vast it is	see everything that I possibly can	the rolling meadows and the buffalo
46	the hiking,history, landscape and wildlife	hike	geysers
47	the beauty of the land	ride motorcycles through the park to see hear and smell the area	waterfall
48	everything is left in a natural state	sightsee and take photos	mountains and waterways
49	scenery	ride motorcycle	Old Faithful
50	glaciers	the vast country, skies, glaciers	big, beautiful, open, breathtaking country and skies
51	the magnitude of the beauty of nature	this is my first trip-Old Faithful, hiking, enjoying nature	Old Faithful going off, wild animals
52	geysers, animals	tour	Old Faithful, tower falls, fishing bridge
53	wildlife, geysers	it is different than any other	wildlife, flowers, trees
54	wilness, nature, animals	seasonal worker	scenery, waterfalls, rivers
55	love it!	nature walks/studies, photography	massive edifices, wild animals you can observe, Old Faithful, preserved nature!
56	everything is so beautiful	explore the sights, take pictures and share views with loved ones	beautiful rivers, mountains, wildlife
57	nature	the wildlife and geology	bears, Old Faithful

Note: Empty cells indicate no response.

Table 4. Large format (IMAX) viewing history.

Survey number	Watched IMAX films before	Number of films	Names of IMAX films
1	n	0	
2	y	5 to 6	
3	y	3 to 5	Zion, Grand Canyon, Space Exploration
4	y	1	Grand Canyon
5	y	10	Grand Canyon, Antartica, Bears
6	n	0	
7	y	4	Bears, Coral Reef Adventure, Dolphins
8	n	0	
9	y	1	
10	y	3/year	Yellowstone (yearly since 1995), Lewis and Clark, Yosemite, Zion, Coral Reef, Bears
11	y	4	Coral Reef, Yellowstone, Lewis and Clark
12	y	6	
13	y	3 to 4	Roller Coasters, Immigration to the New World
14	y	10 or so	Astronauts at Cape Canaveral, Ring of Fire
15	n	0	
16	y	5	To Fly, Blue Planet, Fighter Alive
17	y	4	Beavers, Blue Planet
18	y	4	Space Show (Tom Hanks, Alamo, Indy, NASCAR
19	y	8	Zion, Bears, Grand Canyon
20	y	5	Lewis and Clark, Africa, Dolphins
21	y	3	China
22	n	0	
23	y	4	Grand Canyon, Space, The Deep
24	y	1	
25	y	1	African Safari
26	y	5 +	Grand Canyon, Ring of Fire, Lions
27	y	3	Fires of Kuwait, Desert Storm, (Tom Hanks)
28	y	1	Huntsville, AL space film
29	y	3	

Note: Empty cells indicate no response.

Table 4. (continued).

Survey Number	Watched IMAX films before	Number of films	Names of IMAX films
30	y	5	Lewis and Clark, Zion, Helicopter, Grand Canyon, Everest
31	y	1	Everest
32	y	1	Everest
33	y	4	
34	y	1	Mt. St. Helens
35	y	3	Zion, Superman Returns
36	n	0	
37	y	5	Zion, Polar Express, Volcanoes, Fantasia 2000
38	y	3	Grand Canyon, Flight
39	y	4	Alamo, Grand Canyon
40	y	6	Grand Canyon, Caves, Alaska, Canyon Voices, Lewis and Clark
41	y	6	Everest, Ozarks, Immigration
42	y	2	
43	y	2	
44	y	2	Aliens of the Sea
45	y	1	Bears
46	y	5	King Tut
47	y	1	Grand Canyon
48	n	0	
49	y	2	Grand Canyon, Hearst Castle
50	y	4	Grand Canyon, Hearst Castle
51	y	1	Grand Canyon
52	y	4	Bugs!, Space
53	y	4	
54	y	6	Lewis and Clark, South Pole, Grand Canyon
55	y	10	California Wild, Mt. St. Helens
56	y	3	
57	y	2	

Note: Empty cells indicate no response.

Table 5. Affective response to *Yellowstone*.

Survey Number	Pulled into film?	When?
1	yes	final 10 minutes
2	yes	helicopter flight sequences
3	yes	lifesize everything-people;movement throughout that would otherwise be impossible
4	yes	made you feel you were right there in the midst
5	yes	mountain ridges, water rafting
6	yes	soaring over peaks
7	yes	aerial images, bears roaring into camera
8	yes	from beginning
9	yes	flying
10	yes	flying scenes, bear in camp, underground scientist and girl friend, areas no longer able to see because of increasing age
11	yes, all through out	
12	no	
13	yes,	rafting on river, camera probe in Old Faithful, many more, water seems very compelling
14	yes	whitewater trips
15	yes	when bears appeared, views of waterfalls
16	yes	whenever humans were involved
17	yes	right from the beginning
18	no	too many over the peak shots, too many bears, not enough about the park
19	yes	Old Faithful scene
20	yes	often
21	yes	right from the beginning
22	at times	
23	yes	flying over mountains and into action
24		
25	yes, very much	the explorers
26	some-what	exploring the rapids
27	y	only at Old Faithful with the camera going into the hole of it. Also the rafting on river
28	y	ultralite flying
29	y	watching the spirit of man in action in discovery of nature's wonders

Note: Empty cells indicate no response.

Table 5. (continued).

Survey Number	Pulled into film?	When?
30		
31	y	the river scenes
32		during flight scenes through the canyon, over mountains, and down the river
33	y	in the river scene through the rapids
34	definitely	especially the parts when the camera was moving forward
35	y	when it zooms through the countryside
36		
37	y	the flight scenes
38	y	over mountains
39	y	whole time, so close you could touch it
40	y	aerial shots
41	y	when the image came directly at me, ie, the bear and the rocky outcropping at my right
42	y	movement in helicopter and music
43	y	going through the mountains
44	y	during the rafting scene and aerial views
45	y	when the bear "talked" to the native boy
46	y	aerial shots brought me into the action
47	y	during the flights over the land
48	y	near the beginning through a canyon
49	n	
50	y	flying through the canyon, the rushing water, the bear
51	y	when you flew over the terrain
52	y	soaring over the ridges
53	y	at the beginning
54	y	traveling through canyons and down rivers
55	several times	the rapids the waterfall, the bear
56	y	during the flights especially
57	y	while flying over the mountains

Note: Empty cells indicate no response.

Table 6. Viewer's reasons for choosing and response to *Yellowstone*.

Survey Number	Why did you choose to watch this film?	Words that describe the images of Yellowstone in the film?	What was your favorite part of the film?
1	information	great	scenic vistas
2	to learn about Yellowstone	magnificent awesome	the decision of the scouting party to make it a national park
3	enjoyed previous imax films	breathtaking, sweeping, impossible	aerial views
4	because the Grand Canyon movie was so good	breathtaking, made you feel you were right there in the midst	
5	curiosity	breathtaking, raw	
6	only one showing	awesome, spectacular	
7	wanted to see Yellowstone's greatest hits	breathtaking	aerial shots
8	informative	truly awesome, incredible, breathtaking	aerial views
9	saw Grand Canyon	good	flying
10	vacation, love past presentations, family time	awesome, beautiful, grant, love the visual access and history	how impressive you portrayed the wonder of the Creator
11	Yellowstone was great, want to go to Grand Canyon next year, this is the closest I can get now	beautiful	family experience of togetherness
12	wife wanted to see it	over the top	geysers
13	to learn more about y	beautiful, informative, evocative	
14	to learn more and enjoy with grandchildren	beautiful	all the scenery
15	to keep up to date with what is happening world wise	magnificent awesome	
16	interested in an overview	well done	scenery
17	info on Yellowstone, history	majestic, beautiful, breath taking, magnificent	Old Faithful
18	we were here	not so good, I was disappointed (sorry)	seeing the waterfall in the winter
19	hoping to learn more about the history and geology of the area	historical, scenic, grand	(music too loud)
20	I would be out seeing it for real but we broke down and my husband got a ride to Bozeman to rent a car to get home; I got to stay and see all this	big, realistic, awe-inspiring	scenery
21	gain info about the park	magnificent	the history of exploration
22	wanted to see Yellowstone from another perspective	breathtaking	the flying scenes
23	to see what I can't	awesome	no one part
24	have my kids see the IMAX	awesome	everything
25	I was interested because I knew I would not be able to see all Yellowstone in two days	breathtaking, free from all cares	the facts about the satellites
26	learn more about the Yellowstone NP and see things we were unable to see	close up and gorgeous	the animals and geyser "fireworks"
27	show my kids more about Yellowstone		rafting in the water
28	part of the visit	awesome	ultralight flying, Jim Coulter
29	we have been thrilled at the marvelous experience of watching geothermal features at such close quarters	excellent, exciting, beautiful photography	spiritof mankind to unearh the mysteries

Note: Empty cells indicate no response.

Table 6. (continued).

Survey Number	Why did you choose to watch this film?	Words that describe the images of Yellowstone in the film?	What was your favorite part of the film <i>Yellowstone</i>?
30	other IMAX are good	well done	none in particular
31	interested in seeing the beauty of the park from a different view	breathtaking	the animals
32	interested to see the images the film would provide me	amazingly, fantastic, spectacularly wild!	the panoramic views of the land
33	it told about Yellowstone park	magnificent	the bears
34	I am interested in learning about all aspects of Yellowstone	amazing, exciting, heartwarming, awesome	there was no favorite. I am totally fascinated by all aspects of the
35	to get an overview of the park	this film was incredible and beautiful	I enjoyed it all. It was beautiful to see it in the winter.
36	with my three daughters	bold, panoramic	buffalo
37	learn more of the history of Yellowstone park. See areas of the park that are not easily accessible	breathtaking, majestic	the winter scenes
38	free time available	majestic, rugged	scenery
39	the history	fabulous	animals
40	family visiting, I had seen it before	dynamic	the geyser sequence
41	for background and overall information of the park	striking, beautiful, awesome natural forces	natural scenery as if I was flying above the park
42	interest in nature	great	geysers
43	to see all there is to Yellowstone and possibly see something we missed	majestic and magnificent	all the scenery
44	I am staying at Yellowstone for four days and wanted to learn more	magnificent, majestic	I enjoyed the entire film
45	because we are going to the park tomorrow and we wanted to show the girls a preview	grandiose, vivid and very "life like"	the bears
46	to learn more about Yellowstone	magnificent	all of it
47	I was interested in seeing more of the park and obtaining more info	awesome	the bear in camp
48	wanted to know more about the origin of Yellowstone	magnificent, awesome, breathtaking	the snow scene
49	had not seen before	grand	
50	I love nature	wonderful, beautiful, majestic, total nature	the bear and the ride through the water and mountains
51	the IMAX experience and to learn about Yellowstone	magnificent	Old Faithful going off
52	time	spectacular, some parts of the film were worn	
53	quality of picture	the best	bears, history
54	interest in Yellowstone	awesome	grizzly
55	want to learn more about the Yellowstone NP	awesome, exciting, fun, adventure	discovery section
56	we are bringing our granddaughter to see Yellowstone NP	excellent	the bear
57	just interested in history of Yellowstone	beautiful, interesting, intriguing	the historical parts

Note: Empty cells indicate no response.

Table 7. Viewer's perspectives on nature.

Survey Number	What do you think is the filmmaker's perspective on nature?	What is your perspective on nature?
1	past history of exploration	observing
2	yes	the eruption of nature to form this unbelievable place
3	no	
4		
5		
6		
7	that it should be preserved so that it can be shared	I agree
8	God made	
9	not portrayed strongly	the work of the Creator as he set all nature in motion
10	timelessness and every changing	how true
11		
12		
13	I feel the same	you are there!
14	sharing the love of nature	
15	grandeur	
16	preservation	same
17	to appreciate its grandeur	to enjoy, appreciate and take care of it
18	yes, to sell the DVDs	more about the park
19	yes, that nature is to be preserved, protected, enjoyed, left alone	I think national parks are wonderful and we need to do more of the same
20	respectful	nature bats last. Whe will be here long after pesky humans are gone. Nature-mom-rocks!
21	preserve nature in its original form, similar for unique places, however managed	
22	yes, that it needs to be preserved	I agree
23	that our God is big	
24	nature itself	
25	yes, a true view, not make believe, this is about as natural as you can get	
26	to preserve nature and respect the land	to explore and learn
27	I think his intention was to show the public the Indians discovered the park and the idea to make the park a national park	
28	Yellowstone, first national park est. 1872 for the benefit of the people	
29	Yellowstone, the mysteries and secrets have yet to be discovered. Its exciting!	

Note: Empty cells indicate no response.

Table 7. (continued).

Survey Number	What do you think is the filmmaker's perspective on nature?	What is your perspective on nature?
30	Yellowstone	beauty to be preserved
31	not sure	should be looked at and left for the next person to be in awe
32		
33	Yellowstone, the specifics of the animals	
34	I would think the filmmaker views nature as wild and free	I feel the same way
35	it should be preserved	
36	Yellowstone, open to be tamed	not to be tamed
37	that nature is beautiful and wonderful	I believe that nature is the most powerful force in the world
38	preserving nature is important, nature is sacred	nature is to be appreciated and cared for
39	you could be one with nature	
40	nature is to be protected and enjoyed without harming living things	mine is the same
41	how it evolved and how man interacts (ie native amer and those through history)	preserve it to enjoy and appreciate it
42	volcanic action	
43	yes, it must be left to nature and preserved	
44	Yellowstone, to learn more about the history of Yellowstone	its for everyone to enjoy and we need to preserve it
45	yes, protect nature	same
46	the filmmaker appreciates the natural environment and wants to leave it unchanged for future generations to see. He also wants to show how science can have an impact w/out destroying.	I agree
47	yes, nature in the wild it is everchanging	
48	to show how enormous and awe-inspiring nature is	the same
49	maintain what you have	
50	lets love and protect it	
51	the need to protect the vastness of its beauty	I can't believe the wonder of it all
52	created by God not evolved	
53		
54	nature should be left as is and not try to tame	
55	preserve it	
56	just the awesome beauty of the park	
57	it is here for us not us for it, but all things in balance	

Note: Empty cells indicate no response.

Table 8. Viewer's perspectives on preservation after watching *Yellowstone*.

Survey Number	After watching this film, how have your feelings about Yellowstone and the importance of preserving nature changed?	What did you learn about Yellowstone park from watching this film?
1	not changed	history
2	more appreciateive	its awesomeness
3	just enhanced	history and relation with native population
4		
5		
6		
7	no, always supported it	volcanic action, the three calderas
8		
9	no	some other explorers were mentioned
10	preserve and set aside more as possible	satellite presentation, earth breathing, enjoy the forward history of it
11	nature should be saved	history of Yellowstone
12	no change	nothing new
13	more about nature of the grand caldera, history of man's involvement	the part on geology
14	no, but I hope others who are not committed to preservation will learn and be converted to helping preserve for all	several things
15	yes, we must	
16	no change	no change
17	just reinforced	history of the birth of Yellowstone, the computer part was fascinating
18	not at all	nothing new
19	no	recent knowledge regarding geysers and geothermal activity
20	they havent. I guess I'm a pagan because nature makes me feel religious.	the names of the people who discovered things
21	no	the isolation through the history of exploration and the farsight of the explorers and congress during the time
22	no change, just solidified	some of the early history
23	forever to not be messed with	leave nature as is
24	preserve everything	keep things like they are let nature take over
25	different. I will try to be more earth conscious	everyone needs to see this film, because you don't realize the beauty of nature and what people did to get to this point
26	not changed	how it began and was explored
27	no	we did not see all the sites
28	no	
29	yes, the natures secrets andwonders and wildlife need to be preserved	secrets of nature

Note: Empty cells indicate no response.

Table 8. (continued).

Survey Number	After watching this film, how have your feelings about Yellowstone and the importance of preserving nature changed?	What did you learn about Yellowstone park from watching this film?
30	no	please check the use of "ok"-I don't believe a foreign born priest would sy ok to the blackfoot and the blackfoot reply ok!
31	they are the same	the native American culture and the early explorers thought it was unfit for habitation
32	they are reinforced	the early explorations of the geographic region
33	they need to preserve all they can for as long as they can	that I need to see Old Faithful
34	they have not changed. I have always felt it needs to be kept just the way it is.	I learned facts about the parks' beginnings
35	I always felt it was important	some of the exploration of the area
36	no	not enough factual history
37	they havent.	learned about the volcanic activity under the earths cruts and the history of the explorers
38	greater appreciation for preservation	early explorers-variety
39	just how important it really is for the generations to come	volcanic activity
40	not at all	noting I didn't know but I'm a native Idahoan who is curious about nature
41	have not changed	history-both natural andthat of people involved with the park
42	very important. Save our planet	hot geysers
43	I feel the same but with a stronger conviction	nature
44	I think its so important to preserve our natural parks for future generations	I learned more about the history of the land
45	no, they were always important	just about the man, Jim Coulter
46	no change, just affirmed the feelinig and importance I already have	the scientific studies that exist
47	I agree with preserving nature	that is was made a park from the beginning
48	extremely important to preserve the natural habitat	a lot
49	no	did know that it had that many waterfalls
50	it is a must. Lets prove it to the young.	its vast
51	no, felt the same before	how it was developed
52		
53	none	see places that no other way of seeing
54	no	
55	only reinforced strong feelings of preservation	how truly wild and awesome it is!
56	enhanced	confirmed the early history
57	Yellowstone	some of its history

Note: Empty cells indicate no response.

Chapter 5: Large format as sublime technology

This critical cultural study asked questions about meaning-making about nature, Yellowstone National Park and the National Park System from the large format film *Yellowstone*. This filmic format is commonly associated with cultural institutions such as museums, historical sites, and science centers which are implicated in disseminating ideology. It is not unexpected to consider that a film shown at a historical site or in a museum would serve as an agent of ideological dissemination. However, asking questions about meaning-making in *Yellowstone* recognizes that this film format has one critical difference as compared to other films: that the medium has technological characteristics that have the potential to position the viewer's response in specific ways.

Director James Merrill commented that his goal in this film was to entertain, enlighten and inspire, "take the viewer where they could not go, give them an experience they could not have otherwise and suspend them in time and space in ways only possible with IMAX films and theaters" and share "my joyful encounter of nature, my sense of awe and wonder, my confidence in divine design of all things, my fascination with history and of course the fun of the adventure" (Appendix A). Yet this film was not just the construct of the director's intentions. *Yellowstone* grew out of the economic success of the first large format destination film, *Grand Canyon: The Hidden Secrets*, and its creation was accompanied by the development of a company to create and exhibit films, to "develop innovative ways for tourism venues around the world to drive traffic,

enhance the visitor experience, stimulate greater visitor satisfaction, and improve profitability” (Destination Cinemas Inc., undated). Filmic choices for *Yellowstone* were guided not just by the director but by the goal to fill theater seats with tourist dollars, a captive audience with discretionary income. Stakeholders with a financial interest in the success of the film had the “clout” to impose “politically correct” (Appendix A) changes on the film, similar to that seen in television nature films where “in order to attract consumers on this market they have to adapt to prevailing moral and ideological positions” (Ganetz, 2004, 200).

The creation of the film was itself intertwined with the construction of the Yellowstone IMAX Theatre outside Yellowstone. The theater was built because of the film and, conversely, the film was produced because of the theater, thus linking the economic success goals of the stakeholders to that of the film’s construction. This speaks to the tangled relationship between the production, financing and exhibition arenas of the industry and how their dynamics influence the ultimate film product. The specific exhibition needs for large format films has meant that the films and theaters have an incestuous relationship where production of the product is connected to the needs of the theatres. For this film, that meant influencing the content to make it more “politically correct” in spite of the fact that the film was guaranteed exhibition time in its “own” theater space: “in order to attract consumers...they have to adapt to prevailing moral and ideological positions” (Ganetz, 2004, 200).

Guided by economic decisions, *Yellowstone* reflects the ideology of the American conservationist; the responsibility to preserve nature as a “place of

beauty, a retreat, a sanctuary of nature” (Appendix B). This message was apparent to the majority of the survey respondents who felt that the filmmaker’s message was that nature should be preserved, that we should “preserve nature in its original form, similar for unique places, however managed”, “nature should be left as is and not try to tame”, “that nature is beautiful and wonderful” and “to show how enormous and awe-inspiring nature is” (Table 7).

Shown as unknowable except through the scientific gaze--“science can have an impact w/out destroying” (Table 7)--the film links to the mythology of Western expansion through the aesthetic of the ambiguity of conservation and consumption where we see ourselves as “a part of, but not a disturbance to, the natural world” (Louter, 2003, 253). Presented as devoid of human impact, the film offers knowledge of Yellowstone as a cultural construct of spectacle-ized American identity (Bryand, 2005; Grusin, 2004; Jehlen, 1986) unpeopled and undiscovered till European exploration (Coates, 1998). In its stories of “bold strangers” (Appendix B) venturing into the unknown the film continues to present the myth of the archetypal America “which [was] the ever-pristine source of the greatness of the nation and the people and, as such, serve[d] as a sacred site and a unifying symbol in U.S. American culture” (Bryant, 2005, 31).

This sense of Yellowstone as unmanaged was noted by the survey participants. Asked what they liked about Yellowstone, survey respondents noted “unspoiled”, “seeing a beautiful wide open space that is mostly untouched”, “the open land, wildlife, geysers, seeing the earth’s evolution w/out buildings and cities”, and “everything is left in a natural state” (Table 3). This is in spite of the

film's inclusion of the native Tukulikas in the narrative. In *Yellowstone*, "there are no tourists. There are explorers and Indians in the historical segments, but Smoot [the film's cinematographer] and Merrill went to great lengths to keep park visitors out of their images" (Menser, 1995, 10). As in the film, *Spirit of Yellowstone* shown in the Yellowstone park headquarters,

in the two and a half minutes that comprise the opening movements of the film, one sees no humans at all. Recall the three and a half million people who visit the park every year. These spectacular scenes of 'pure' nature required much artful camera work and careful editing to exclude one of the park's most common denizens. Through this elimination of the human, one encounters nature in its pure singularity (Mitchell, 2007, 439).

Partly a choice such as who is or is not in the camera shot, this sense of distance from the natural world was focused through the technological limitations of the large format medium. Long shots (the "deep focus" that for Bazin (2005) and Comolli (1986) was the connection between film and ideology), long shot lengths, and the lack of editing conventions conspire to create the viewer as spectator and apart from nature. "Looking at nature from a high place," wrote John Sears, "enables the observer to take in a large stretch of open country and remain outside of nature, master of what he surveys" (1989, 54). Unlike the commanding or magisterial view from an elevated position with its perspective of "new worlds to conquer" (Boime, 1991, 21) this is the panoramic view of the park vista, where the perceptual buffers between oneself and the image are minimized (Mitchell, 2007).

These limitations combine to create a sense of sublime awe, described by viewer's as beautiful, awesome, amazing, breathtaking, magnificent, and majestic (Table 6). They position the viewer within an ideological space of

humanity as separate and over nature. It is the filmic immersion, the “size of [the] screen [that] really ‘takes you in’ to the environment”, the “greater physical involvement”, that “you seem like you are a part of the film and adventure” (Table 5), that sets up nature as spectacle and places large format at the intersection of ideology and the sublime. As film scholar James Spellerberg (1977, 290) noted,

what is necessary is that the cinematic apparatus be hidden or repressed, so the constitution of the subject appears to be a characteristic of the natural world directly transmitted by the cinema, rather than an effect of production of the medium itself.

The viewer does not see the technology; they see the reality of nature.

Communication scholars Kevin DeLuca and Anne Demo (2000, 249) wrote that Carleton Watkins’ 1860 pictures of Yosemite “construct[ed] a sublime experience in which comfort displace[d] risk as the spectator replace[d] the participant. The distanced position of the spectator obviate[d] the emotional experience of the sublime...leaving only spectacle.” Similarly, *Yellowstone* returns the sublime to the spectacle of the national park through the medium’s technological specificities and positions the viewer’s response to nature through a discourse of sublime spectatorship, “a form of nature tourism enabled by the most technologized of circumstances” (Acland, 1997, 295).

It is possible, though, that the rhetoric of large format—that the medium offers a enhanced, engaging, visceral experience of the national parks—is so culturally engrained that it, not the technology itself, drives the meaning making. A viewer aligned with the rhetoric of the film technology would suspend any possibility of disbelief in the images and their content. Rather than approach the film as a specific individual’s vision (or in the case of *Yellowstone*, of a specific

individual and funders) of *Yellowstone* ripe for interpretation, the viewer instead would defer their critical evaluation of the film. Unchallenged, the film, by dint of its rhetorical technological potentialities, would instead be taken at face value as evidentiary truth.

It is also possible that the results here are a product of the visitors' overall experience of deciding to travel to Yellowstone National Park, and the associated expectations and assumptions about the kinds of experiences they will have, and not a function of the large format experience. As John Urry (1990) pointed out, travel involves anticipation created out of social practices. These practices, which include travel planning and media products such as film, television and literature, have been shown to frame perceptions of the forthcoming activities, leaving the visitor "unable to view the sites without preconceptions" (Kinsey, 1992; see also Szerszynski, 2005). Unfortunately, it is unclear whether the results presented here are products of the preconceptions that guide a sense of what the experience of *Yellowstone* (and *Yellowstone*) will be like, or the rhetoric of large format (and its associated indoctrination into the kind of experience that one *should* have when viewing these films), or some combination of these two factors.

Regardless, this research points to the fact that *Yellowstone* is the construct of the intersecting, sometimes conflictual relationship between the filmmaker and economic stakeholders (for the production of a financially successful film based on their sense of what the audience would want). As a visual text, *Yellowstone* is "the place where collective social action, individual

identity and symbolic action meet” (Hartley, 1992, 3). And because of the medium’s technological specificities, the film is able to re-create the experience of the sublime, creating not a “spectatorial engagement” (Rose, 2007, 1), but a detached, distanced engagement to the images of nature shown in the film. As a representational medium of the natural world, the film alters our relationship to the natural world (Davies, 2000a). The creation of a sublime experience through large format technology places us in a position of knowing but not experiencing; of seeing but not never fully understanding. In the film, science is shown to be a way to vision the natural world, but in the end “some secrets can never be known” (Appendix B).

The American technological sublime (Nye, 1994) celebrates the power to dominate nature by embracing man-made technological projects. Large format films can be seen as an extension of the American technological sublime by celebrating our power to dominate nature *through technology* in the elimination of the connection to nature. We watch it, we are in awe of it, we want to “preserve nature in its original form, similar for unique places, however managed” (Table 7), but we do not have, or perhaps even want, to be in it. Our ability to vision nature so as to recreate reality means that our footsteps in nature, like the missing tourists in *Yellowstone*, leave no trace. And as mass-produced images of nature shape our understanding of and response to the natural world (Davis, 1997), films like *Yellowstone* may provide us with the sense of a sublime experience of nature but do not offer us the insight and true knowledge that we need to make

decisions about the complex realities of our direction interactions with the natural world.

Study Limitations and Future Research

This research provides the first critical cultural analysis of a large format film, and the first research in the medium that considers the intersection of production, text and audience response in meaning-making. However, as with most studies, there are limitations which impact the research outcome, but at the same time, suggest future research questions to consider.

The production analysis was impacted by the lack of access to financial documents and related materials. The distribution company declined to release materials, citing an agreement between the principal shareholders of the company. Additionally, the large format industry, unlike the Hollywood film industry, has no consistent, publicly available information on revenues, markets and distribution. Regardless, this first glimpse into the financing of large format films could be leveraged with focused questions to interview industry executives about the economic factors that impact the production of large format films.

Surveying the audience, rather than the more in-depth interview, focus groups or mental modeling was chosen due to time constraints over the week of data gathering. The choice between surveys and the more in-depth methods was a choice between obtaining a larger sample size through the relatively quick survey than the more in-depth interviewing of a smaller population.

Unfortunately, the generation of sample size through surveys has inherent weaknesses, especially for a study examining meaning making. Surveys tend

toward generalizations across the population, and generate more quantitative than qualitative responses. They are descriptive, rather than explanatory and in consequence cannot provide the in-depth, thoughtful responses that can be obtained through direct questioning that “yields data about actual practices and processes” (Mason, 1994). However, the survey can serve as an exploratory method to provide a baseline for future research (Lindlof & Taylor, 2002) such as the use of more intensive methods to examine audience perceptions in greater detail.

This study was also limited in its focus on only one film, during one season, and in only one national park. Originally the plan for this research was to compare on-site audience responses to another national park large format film, however, access to the theatre site was not allowed. Examining only one film means that the results of this research are not generalizable to other films. The study can only be considered in light of this particular film, at this particular theatre, and at the particular time of the year that the audience was surveyed.

A more valid project would have examined visitor responses at different times of the year, attempt to attract a broader range of visitors in terms of age and ethnicity, and most importantly, have evaluated the response of viewer's at large format theatres other than directly outside Yellowstone, to avoid the situational bias of individuals who were already committed to the park experience through the park-going choices of traveling to the national park.

Other options that would have improved the research would be a pre-viewing survey, audience research on the same film at a non-national park

venue, asking questions about previous experience of Yellowstone National Park, surveying “control” participants who had visited the park but had not seen the film and had not visited the park but had seen the film would have allowed for more thorough analysis of the role of the film in meaning-making about nature and Yellowstone.

Future research should take into consideration the limitations listed here as well as consider extending this research idea of national park films to other “genre” of large format films such as those about nature, science or technology, tourism, adventure, and civilization (Koster, 2000; Wollen, 2003). Given that many of the myths about large format—immersivity, presence, affect, educational value—are based on claims about the format’s size and impact on subconscious responses to the large images, future research should also consider other methods which can be used to assess how large format impacts the viewer’s response through its technological characteristics.

Epilogue

The question could be asked of this research, why this research and why this research now? What is the value in considering meaning making in *Yellowstone* at this time? The answer is less specific to the film than it is to the medium itself; to some degree, any large format film could have been selected. Regardless, the reason to examine this film at this time is that the industry is at the precipice of a major change in technology. Given the economic lock that IMAX has on the industry through their ownership of the camera and the projectors, these changes are coming. In 2008 IMAX Corporation released a

digital projection system which allowed for “IMAX” films to be shown in standard multiplex theaters, not in the historically technology-specific theaters such as the Yellowstone IMAX. Just this last year, the media erupted in response to actor Aziz Ansari’s²³ blog rant about paying extra money for an IMAX version of *Star Trek* (2009); the blog detailed the fact that digital IMAX is shown on screens far smaller than the giant screens historically associated with the medium.

Compounding this shift in what is considered an IMAX experience is that in 2010, IMAX plans to roll out digital 3D cameras. A major factor in delimiting large format films has been the issues associated with the heavy cameras, short film cassettes and associated capture problems. The question that now haunts the industry is whether with this changes can these films still be considered large format (IMAX) when they are no longer captured with 15 perforation/70 mm film or shown on large screens?

Large format has been billed for years as a visual experience driven by a technology that results in images that are unparalleled and unmatched by any other visual medium. As shown here, these films have been constructed through the complex interactions between filmmaker and funder and visioned by the audience through the filmic structures limited by technological characteristics. Shifting to digital capture and display means that some of the results discussed here, such as the role of funders in influencing film content (it is likely that digital capture will decrease the overall cost to make a large format film), the size of the screen (and by corollary, the size of the images), and the editing choices shot

²³ See <http://azizisbored.tumblr.com/post/106587114/reblog-the-fuck-out-of-this-warning-amc-theaters-are>.

type and camera movement which in *Yellowstone* were shown to be implicated in meaning-making (changing to digital capture will likely eliminate the editing choices which were limited by the large format technology), will no longer be relevant. As the industry faces changes in how large format films are captured and displayed, the role of these factors will shift in how they influence, or not, the viewer's response to the film and the knowledges they take from the film.

Whether this is good or bad is irrelevant; what is critical here is that the results from this study may be useful in guiding the future large format experience due to these potential changes in economics, control, image capture and image display.

Appendix A. Kieth Merrill interview

1. What was your intent for this film?

The primary intent of every film I've ever made is three fold. (1) Entertain (2) Enlighten. (3) Inspire. Yellowstone was no different. IMAX is a film medium that allows the film maker an unusual opportunity to immerse the audience in images and sound in ways not otherwise possible. The geometry of theater design, 45 surround sound speakers and an image with 10 times the resolution and 5 times the size of normal film create an almost real experience. My objective in this film, like all of my IMAX films was to take the viewer where they could not go, give them an experience they could not have otherwise and suspend them in time and space in ways only possible with IMAX films and theaters.

2. What did you want the viewer to take away in terms of main messages?

There is an oft quoted adage in the movie business. "If you want to send a message, use Western Union." There were no "messages" per se' in the movie nor did I intend to spoon feed the audience a "main message." That said, art is a reflection of the artist so to the extent my own attitudes, interests and beliefs show up in the film, some may call them "messages", but I did not begin with the question, "What MESSAGE do I want to convey?" I simply followed my instincts and hopefully shared my joyful encounter of nature, my sense of awe and wonder, my confidence in divine design of all things, my fascination with history and of course the fun of the adventure. The concept behind the Yellowstone film

was in fact an entirely new concept for large format cinema that I developed in creating the first of my IMAX films, also at a National Park, Grand Canyon, The Hidden Secrets. The idea is simple. People travel from around the world to visit these places--to visit Yellowstone National Park, but when they get there they realize they have allowed two days and it is virtually impossible to see it all, experience the vast changes wrought by each season, encounter the wildlife, or get any sense of the history--the people places and events--that happened in the very spot they may be standing. So my goal with Yellowstone - as in all of my IMAX films - was to extend the visitors experience into realms not otherwise accessible to them.

3. How was this film funded?

The film was funded by a company that specialized in these kinds of projects. It was in a fact a company that grew out of my *Grand Canyon* film Project. They were the financial backers of my *Grand Canyon* IMAX project and that project was so successful that they formalized the funding into a company and went on to finance and operate several other similar venues.

4. Who were the sponsors?

There were no "sponsors" per se'. It was a private enterprise with private investment. That said I seem to recall that there was an alliance of IMAX theaters or an association of some sort made up of owners, operators or managers of IMAX theaters who had a financial stake in the film. I remember that because

they had enough clout to impose their "political correct" views onto the film and force me to make changes that were revisionist in terms of history and plain stupid in terms of the flow of the movie. Such is the catastrophe of "political correctness". One more victim testifies. Over time the theater and even the film may have acquired sponsorships but at the time of production there were no sponsors.

5. What was the overall cost of making this film?

\$6,000,000.

6. What has been your sense of how the film has been received?

The film has been well received as far as I know. Unfortunately the final version of the film and the one showing in theaters because certain of the backers got worried about "being politically correct" and demanded changes that not only revised the reality of the history of Yellowstone but essential screwed up the central thread of continuity designed into the film from the beginning. Of course the audience never measures a film by what is taken out, only what is left in, so they like the movie in spite of the fact the people who funded a portion of the film pretty much ruined it, at least they made significantly less than it was in the director's cut.

7. Does it match with your intentions for the film?

I've never liked the film because of what the idiots that made me change it so I've not worried or thought much about what the audience says. I figure anyone who doesn't like the film can blame the guys who forced the changes, not me.

8. You have made multiple films about national parks. What is your perception of the national parks and their role in American society?

I think the concept of National Parks was inspired by God... truly. Whatever the motivations of these visionary men and women WAY BACK THEN - when most of America was wild, rural open space, is truly remarkable. I LOVE THE NATIONAL PARKS - and forgive them all of their sins knowing that they are a branch of Government (who can never do anything completely right or very efficiently). I simply think the role of parks in this country is magnificent. The people who dedicate their lives the National Park City (unlike most government employees) are in my opinion some of the GREAT folks of the country. Most are truly dedicated to the preservation of these magnificent natural places and a reasonable number of them even understand "preservation" does not mean "no access allowed."

9. What was the response of the National Park service to your making this film?

They were most cooperative. At the end of the day I do not know "the official" reaction or response of the Park Service. You would have to ask them. The

rangers that helped us were in the film and made it all possible were terrific and I think most of them liked it. The film of course features a park ranger - but that is one of the really cool parts that got screwed up by the sponsors.

10. Do you recall any issues that the NPS had for or against the film project?

No. There are always "dos and don'ts" when filming in a National Park of course - I regret that those rules are getting more and more difficult making filming in National Parks an increasingly difficult thing to do .. BUT, no, I don't recall any particular problems filming at Yellowstone due to the NPS.

Appendix B. *Yellowstone* transcript.

Shot number	Description	Narration
1	Opening titles and credits	
2	Sunrise/sunset flyover	
3	Flyover of trees in winter	
4	Flyover of lake	Yellowstone is a place and an idea. It is a curious connecting place of nature, man and creation.
5	Eagle flying over trees	It is meaningless to pick a place in time when Yellowstone was born. In many ways, Yellowstone is still being born. The ancient story is not finished.
6	Native American adult fishing, young boy in camp	No one knows when man first came to the land of the yellow stone. The Tukudikas were living here when history began.
7	Bear cub by stream	
8	Native American boy sees bear	
9	Bear cub in stream	
10	Native American boy watches bear	
11	Bear cub to cave	
12	Boy watching bear	
13	Bear cub enters cave	
14	Boy picks up firebrand	
15	Adult fishing, watching boy	
16	Boy enters cave	
17	Boy inside cave	
18	Boy inside cave, bear stands	
19	Boy inside cave	
20	Bear growling in cave	
21	Boy in cave	
22	Boy and bear in cave	
23	Adult enters cave	
24	Boy and adult in cave	
25	Bear in cave	
26	Boy and adult in cave	
27	Bear in cave	

Shot number	Description	Narration
28	Boy and adult in cave	
29	Bear in cave	
30	Boy and adult in cave	
31	Boy and adult by campfire/night	The great bear has spoken to you. He is our grandfather. His spirit will give you power. He is our brother. His power will give you strength. To kill the great bear is not the way of our people. He is ruler of the beasts. He is master of the mountains.
32	Boy and adult by campfire/night	It is the great bear who protects our home and the gifts Mother Earth has given us.
33	Fumarole at sunrise/sunset	For much of the time man has been what historians called civilized. He has feared the wilderness. It was a foreboding place of wild beasts and wild man.
34	John Coulter in snow	As the first of the few bold strangers ventured into the unknown, the perception of wilderness began to change. John Colter went with Lewis and Clark to the unexplored lands of the upper Missouri. The expedition returned to civilization. John Colter stayed. He trapped. He traded. He wandered five years...
35	John Coulter in snow	
36	John Coulter in snow	...in an unknown wilderness, virtually alone. (John Colter (actor): I went to the Crow nation in the winter of 1806. It was upwards of 500 miles from Manuel's Ford to the mouth of the Big Horn River.)
37	John Coulter trading with Native Americans	(JC: I travelled the foot of the Absaroka Mountains, followed the Wind River. I crossed the mountains to the west. For some, the border of the wilderness is the boundary of human courage.)

Shot number	Description	Narration
38	John Coulter trading with Native Americans	(JC: But the power of the wild has possessed me. I am left with profound admiration...)
39	John Coulter trading with Native Americans	(JC:...for nature. I find myself attached with deep sentiment for all things primitive. And as for wild men...)
40	John Coulter carving	(JC: ...I find them remarkable.)
41	John Coulter carving	
42	Mountains/John Coulter	
43	Mountains/John Coulter	(JC: I have heard the legends of a mysterious plateau above the place the Indians call the E-chee-dick-kash-ah-shay...)
44	John Coulter in winter woods	(JC:...the river of the yellow stones. I headed north to see them for myself. The whole region is filled with curious wonders.)
45	Fumarole/John Coulter	(JC: It is as if nature has chosen this place to display her most curious handiwork. It is impossible...)
46	Fumarole/John Coulter	(JC:...to walk this land and not believe in the...)
47	Fumarole/John Coulter	(JC:...oneness of nature. A creation greater than we understand embracing God and man and stars in heaven.)
48	John Coulter by lake	
49	Winter stream steaming	
50	Flyover waterfall	
51	Wilson Hunt; climbing mountain	Wilson Hunt crossed the Yellowstone River in search of an overland route to the mouth of the Columbia River. The intrusion into the unknown lands of the Yellowstone had begun.
52	Wilson Hunt	(Wilson Hunt (actor): The great granite peaks of Trois Teton were greeted by the men with a joy...)

Shot number	Description	Narration
53	Mountains and explorers	(WH:...a beacon on a seashore was hailed by mariners after a long and dangerous voyage. We had reached the Great Divide and we were alive.)
54	Mountains and explorers	
55	Campsite	(WH: Weary and worn by our arduous overland trek, we decided to abandon our horses and return to the river.)
56	Sunrise/sunset over river	(WH: It is an uncharted wilderness. We do not know what lies ahead.)
57	Explorers/rafts	
58	Explorers/rafts	
59	Explorers/rafts	
60	Explorers/rafts	
61	Explorers/rafts	
62	Explorers/rafts	
63	Explorers/rafts	
64	Explorers/rafts	
65	Explorers/rafts	
66	Explorers/rafts	
67	Explorers/rafts	Hunt's party finally reached the Columbia River. They deemed the west unfit for habitation. Unexplored and undiscovered, the Yellowstone plateau returned to solitude.
68	Explorers/rafts	
69	Flyover fumarole and bison	The elk, the bison and the bear reclaimed their quiet kingdom.
70	Elk	
71	Coyote	
72	Elk	
73	Bison	
74	Elk	
75	Elk	
76	Sunrise/sunset flyover	
77	Wolf howling	
78	Waterfall	

Shot number	Description	Narration
79	Elk herd in snow	
80	Bison in snow	
81	Flyover snowy mountains	
82	Trappers on horseback	Joseph Meeks was 19 years old the year he joined a band of trappers headed north on the Wind River. They crossed the mountains and entered the mysterious lands of the Yellowstone. (Joseph Meek (actor): Snows come early, its colder then hell, and I ain't been able to feel...)
83	Trappers on horseback	(JM: ...my toes for more than a month. Hard now to remember why just why I was so anxious to get to the mountains. I've heard strange stories about the...)
84	Trappers on horseback	(JM:...country to the west. Jim Bridger himself was telling yarns about a valley so big you could holler at night before you to to bed and...)
85	Trappers on horseback	(JM:...your echoes would wake you up at sunrise. Tallest tales I've ever encountered.). The fur trade ended. For more than 20 years the wonders of Yellowstone remained hidden by hearsay and...
86	Trappers on horseback	...shrouded in myth. Only the native people, themselves a part of the place, knew the secrets of Yellowstone.
87	Bison herd	
88	Native American and Father Kuppens	Father Francis Kuppens was a Jesuit priest in pursuit of native souls. He lived among the Piegan Blackfeet. Together they became part of Yellowstone history in a curious and unexpected way.
89	Bison herd	
90	Silhouette Native Americans and Father Kuppens	

Shot number	Description	Narration
91	Inside Blackfeet teepee	(Kuppens (actor): I have lived among the Blackfeet many years. I respect them in ways uncommon to our mission. They have come to trust me and call me friend. I spent many evenings at the fire of Chief Big Lake. We speak often of the land and the beauty of mother earth. He has told me of a sacred place where the water makes thunder. He agrees to take me there.)
92	Inside Blackfeet teepee	
93	Inside Blackfeet teepee	
94	Inside Blackfeet teepee	
95	Blackfeet and Father Kuppens climbing	
96	Blackfeet and Father Kuppens climbing	
97	Blackfeet and Father Kuppens climbing	
98	Waterfall flyover: Grand Canyon of the Yellowstone	
99	Father Kuppens	
100	Waterfall: Grand Canyon of the Yellowstone	Tall tales of mountain men have been easy to ignore.
101	Stream flyover	But Kuppens was a man devoted to God. When he described what he'd seen, men listened in a different way. The serious exploration of Yellowstone began.

Shot number	Description	Narration
102	Washburn expedition	The expedition led by General Henry Washburn was the second of three major expeditions. But it was an unemployed tax collector named Nathaniel P. Langford that gave Washburn's survey a significant place in Yellowstone history.
103	Campsite	(Actor: We departed Fort Ellis with rations for 30 days. We brought up a pavilion tent with munitions, a dog named Snipper, and a box of cigars. We followed the trail the Folsom party established a year ago. We are camped at the junction of the Firehole and the Gibbon Rivers. Our days are filled with examining, measuring and recoding strange features of the region.)
104	Bear in camp	
105	Campsite	
106	Campsite	
107	Campsite	
108	Campsite	
109	Campsite	
110	Bear in camp	
111	Campsite	
112	Bear in camp	
113	Campsite	
114	Bear in camp	
115	Campsite	
116	Bear in camp	
117	Campsite	
118	Bear in camp	
119	Campsite	
120	Campsite	
121	Bear in camp	
122	Campsite	
123	Bear in camp	

Shot number	Description	Narration
124	Campsite/campfire	(Actor: Each day brings something new and unexpected. Someone suggest most prominent points of interest should be turned into a common pool for the benefit of all.) (Actor: All the money we make from tourists should be split evenly between us all.) (Actor: No, no no, I don't approve of any of these plans. There ought to be no private ownership of any portion of these regions. The whole of it should be set aside as a great reserve, as a great national park, and each of us should make an effort to have that accomplished.)
125	Mountain flyover	
126	Moose	Five months later Yellowstone became the first national park in the United States and the first preserve of its kind in the world. It was not...
127	Bison	...the birthplace of a new idea. It was an expression of changing perception. The notion to preserve this wilderness as a significant evolution in the relationship between man and nature. The wilderness, once a hideous...
128	Bear cub	...place of wild beasts and wild men, became a place of beauty, a retreat, a sanctuary of nature.
129	Fumarole	But beauty and beasts do not make Yellowstone unique. Her singular distinction is geology. Yellowstone is a geological park. It is a window on the interior of the earth.
130	Geysers	
131	Geysers	
132	Geysers	
133	Geysers	
134	Geysers	
135	Geysers	

Shot number	Description	Narration
136	Geysers	
137	Geysers	
138	Geysers	
139	Geysers	
140	Mudpot	
141	Mudpot	
142	Geyser flyover	
143	Geyser flyover	
144	Geysers	
145	Car driving through grassland	
146	Car driving through woods	
147	Front window of car: Francis Boyd	Francis Boyd was a Harvard graduate student when he first came to Yellowstone. (Francis Boyd (actor): I am fascinated by a theory of volcanoes, an idea that rocks liquefy in violent eruptions and flow fast...)
148	Francis Boyd hiking	(FB:...like rushing water and then solidify in place like welded tops. My professor thinks it impossible.)
149	Francis Boyd hiking	(FB: I have come to Yellowstone each summer for the past four years to examind that hypothesis. Jenny likes fields trips and I like Jenny. I've come to a whole other conclusion...)
150	Cave entrance	(FB:...that Yellowstone might be a giant collapsed crater of a not so extinct volcano, a massive caldera.
151	Inside cave, climbing down ladder	(FB: The concept of calderas is not unknown but in an odd way, my idea seems...)
152	Inside cave, photograph	(FB:...to rise up from the earth on the plumes of smoke and steam as if presenting itself to me for examination.) Boyd presented his modified hypothesis in a doctoral thesis. Remarkably, he was right. He had opened a window that would never close.
153	Flyover geyser	

Shot number	Description	Narration
154	Scientists: Dr. Robert Smith	Dr. Robert Smith is the world's foremost authority on Yellowstone.
155	Scientists: Dr. Robert Smith	With computers, satellites, and 30 years of devoted study, he has combined what we know with a startling new idea. (Robert Smith: Yellowstone was formed by a giant volcanic hotspot...)
156	Scientists: Dr. Robert Smith	(RS:...rooted deep within the earth. Global positioning satellites allow us to recover the rise and fall of the surface. The ground here is breathing.)
157	Scientists: Dr. Robert Smith	(RS: It is interesting to consider the perspective of a satellite where ancestral Yellowstone was born.)
158	CGI graphic GPS system, volcanic hotspots	(RS: Computers let us see in seconds what occurred over millions of years. Hot, molten rock rose from deep within the earth's interior creating a line of volcanic centers called calderas. Yellowstone, as we know it today, was created by the last of these violent eruptions just 600,000 years ago. It was an immense explosion. Remnants of hot ash were thrown thousands of miles into what we know as Canada and Mexico. The hot spot below is still active. The immense heat causes the world's greatest display of hot springs and geysers. Rainwater percolates downward and is heated by contact with super-heated rocks. The hot water rises to the surface at temperatures far beyond the boiling point. In an instant, it flashes to steam, erupting to the surface--the most famous geyser of all, Old Faithful.)

Shot number	Description	Narration
159	Old Faithful and scientists: Drs. Susan Kieffer, Westphal	Susan Kieffer has been studying Old Faithful geyser for nearly 20 years. She and her colleague Jim Westphal have recently accomplished an extraordinary feat, inserting ...
160	Old Faithful and scientists: Drs. Susan Kieffer, Westphal	...a videoprobe into the throat of Old Faithful. (Kieffer: Old Faithful is the most famous geyser in the world. Curiously we know very little about it or why it erupts with such predictable regularity. I wanted to learn what happens between eruptions. How does...)
161	Old Faithful and scientists: Drs. Susan Kieffer, Westphal	(Kieffer: ...hot water get back into the geyser after an eruption and what causes it to go off again.) (Westphal: Susan came to me ...
162	Old Faithful and scientists: Drs. Susan Kieffer, Westphal	(Westphal: ...with a crazy idea. To drop probes and a camera into Old Faithful.)
163	Old Faithful and scientists: Drs. Susan Kieffer, Westphal	It has taken us 10 years of cautious trials before we developed a camera probe we thought would not get caught ...)
164	Old Faithful and scientists: Drs. Susan Kieffer, Westphal	(Westphal: ... in the vent. Our greatest fear is getting stuck.)
165	Probe inside Old Faithful (video)	(Westphal: Sometimes drops of water fall off the camera housing. That's convenient. Cause they show us which way is straight down. As we go deeper we discover the water is boiling wildly. Old Faithful fills from the bottom where the water is hottest and the pressure is highest. Trying to erupt just like a warm can of soda pop. That's why it goes off so fast and so regular.
166	Old Faithful	
167	Old Faithful erupting	
168	Flyover trees	

Shot number	Description	Narration
169	Ranger Myla Fawn hiking	Myla Fawn is a descendent of the Tukurikas, the native people of Yellowstone. Her ancestors were guardians of the Mother Earth. In her own way, Myla continued...
170	Ranger Myla Fawn hiking	...the traditions of her people. She is a ranger for the National Park. (Myla Fawn: Only to the white man was nature wilderness.)
171	Ranger Myla Fawn hiking	(MF: Only to him was the land infested with wild animals and savage people. To us, nature has always been tame and...)
172	Ranger Myla Fawn hiking	(MF: ...we have been one with her. The spirit of the grandfathers....)
173	Bear	(MF:...still lingers within the land and the great bear still stands as sentinel upon the land. The circle of life is unbroken.)
174	Eagle	
175	Bear	
176	Eagle	
177	Eagle flying over trees	
178	Flyover winter stream	
179	Sunrise/sunset winter	Yellowstone was born in chaos, but chaos has not ended. The ancient story is not ended. For a brief moment we peer into the windows of our earth but some secrets can never be known. This much is certain: the upheaval will come again. Some things are forever wild.
180	End credits	

Appendix C. Shot by shot analysis of selected sequences.

Analysis category	Shot number	Description	Shot type	Camera movement	Camera angle	Narration
Nature	69	Flyover fumarole and bison	Extreme long shot	Tracking	High angle	The elk, the bison and the bear reclaimed their quiet kingdom.
Nature	70	Elk	Medium long shot	Pan right	Straight	
Nature	71	Coyote	Medium long shot	(none)	High angle	
Nature	72	Elk	Medium long shot	(none)	Low angle	
Nature	73	Bison	Extreme long shot	Pan right	Straight	
Nature	74	Elk	Medium long shot	Pan right	Straight	
Nature	75	Elk	Medium long shot	(none)	Pan right	
Nature	76	Sunrise/sunset flyover	Extreme long shot	Tracking	High angle	
Nature	77	Wolf howling	Medium long shot	(none)	High angle	
Nature	78	Waterfall	Extreme long shot	Tilt	Low angle	
Nature	79	Elk herd in snow	Medium long shot	Pan right	Straight	
Nature	80	Bison in snow	Medium shot	(none)	Straight	
Nature	81	Flyover snowy mountains				

Analysis category	Shot number	Description	Shot type	Camera movement	Camera angle	Narration
History	88	Native American and Father Kuppens	Medium long shot	Straight	Low angle	Father Francis Kuppens was a Jesuit priest in pursuit of native souls. He lived among the Piegan Blackfeet. Together they became part of Yellowstone history in a curious and unexpected way.
History	89	Bison herd	Extreme long shot	Pan left	Straight	
History	90	Silhouette Native Americans and Father Kuppens	Medium long shot	Straight	High angle	
History	91	Inside Blackfeet teepee	Medium shot	(none)	Straight	(Kuppens (actor): I have lived among the Blackfeet many years. I respect them in ways uncommon to our mission. They have come to trust me and call me friend. I spent many evenings at the fire of Chief Big Lake. We speak often of the land and the beauty of mother earth. He has told me of a sacred place where the water makes thunder. He agrees to take me there.)
History	92	Inside Blackfeet teepee	Medium shot	(none)	Straight	
History	93	Inside Blackfeet teepee	Medium shot	(none)	Straight	
History	94	Inside Blackfeet teepee	Medium shot	(none)	Straight	
History	95	Blackfeet and Father Kuppens climbing	Medium long shot	Pan right	High angle	
History	96	Blackfeet and Father Kuppens climbing	Medium long shot	Pan left/tilt up	Low angle	
History	97	Blackfeet and Father Kuppens climbing	Medium long shot	(none)	Low angle	
History	98	Waterfall flyover: Grand Canyon of the Yellowstone	Extreme long shot	Tracking, pan left	High angle	
History	99	Father Kuppens	Medium shot	(none)	Low angle	
History	100	Waterfall: Grand Canyon of the Yellowstone	Extreme long shot	(none)	Straight	
History	101	Stream flyover				But Kuppens was a man devoted to God. When he described what he'd seen, men listened in a different way. The serious exploration of Yellowstone began.

Analysis category	Shot number	Description	Shot type	Camera movement	Camera angle	Narration
Science	159	Old Faithful and scientists: Drs. Susan Kieffer, Westphal	Medium long shot	Tilt down	Straight	Susan Kieffer has been studying Old Faithful geyser for nearly 20 years. She and her colleague Jim Westphal have recently accomplished an extraordinary feat, inserting ...
Science	160	Old Faithful and scientists: Drs. Susan Kieffer, Westphal	Medium long shot	(none)	Straight	...a videoprobe into the throat of Old Faithful. (Kieffer: Old Faithful is the most famous geyser in the world. Curiously we know very little about it or why it erupts with such predictable regularity. I wanted to learn what happens between eruptions. How does...)
Science	161	Old Faithful and scientists: Drs. Susan Kieffer, Westphal	Medium long shot	(none)	Low angle	(Kieffer: ...hot water get back into the geyser after an eruption and what causes it to go off again.) (Westphal: Susan came to me ...)
Science	162	Old Faithful and scientists: Drs. Susan Kieffer, Westphal	Medium shot	(none)	Low angle	(Westphal: ...with a crazy idea. To drop probes and a camera into Old Faithful.)
Science	163	Old Faithful and scientists: Drs. Susan Kieffer, Westphal	Medium shot	(none)	Straight	It has taken us 10 years of cautious trials before we developed a camera probe we thought would not get caught ...)
Science	164	Old Faithful and scientists: Drs. Susan Kieffer, Westphal			High angle	(Westphal: ... in the vent. Our greatest fear is getting stuck.)
Science	165	Probe inside Old Faithful (video)	Medium shot	(none)	Low angle	(Westphal: Sometimes drops of water fall off the camera housing. That's convenient. Cause they show us which way is straight down. As we go deeper we discover the water is boiling wildly. Old Faithful fills from the bottom where the water is hottest and the pressure is highest. It ready to erupt just like a warm can of soda pop. That's why it goes off so fast and so regular.
Science	166	Old Faithful	Extreme long shot	(none)	Straight	
Science	167	Old Faithful erupting	Extreme long shot	(none)	Low angle	

Appendix D:
Survey instrument post-viewing of the large format film *Yellowstone*

1. Have you watched IMAX films before?
 Yes
 No
About how many? _____
Write down the names of as many films you can remember seeing:
2. What do you like about visiting Yellowstone and the national parks?
3. What do you like to do when you visit Yellowstone?
4. When I think of Yellowstone the main images that come to mind are:
5. Do you watch any of the following more than once a week?
(Check all that apply)
 Evening news on television
 Discovery channel
 National Geographic Channel
 Animal Planet
 Travel channel
 Movies on DVD
 Movies at the movie theater
6. Why did you choose to watch this film?
7. What words would you use to describe the images of Yellowstone Park in this film?
8. Did you feel like you were “pulled into” the film, as if you were part of the action on the screen? If yes, where and when did it happen during the film?
9. Did you think the filmmaker had a particular point of view of nature, and if so, what was it? What is your point of view of nature?
10. What are the differences in the experience of watching IMAX films versus regular films?
11. After watching this film, how have your feelings about Yellowstone and the importance of preserving nature changed?
12. What did you learn about Yellowstone Park from watching this film?
13. What was your favorite part of the film *Yellowstone*?

14. What is your:

Age?

Gender?

Male

Female

Ethnicity?

15. Where (city/state/country) did you grow up?

16. Where (city/state/country) do you live now?

17. Do you belong to any nature or environmental associations?

(Check all that apply)

Sierra Club

Nature Conservancy

Greenpeace

National Wildlife Federation

Other (please list)

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