NAVIGATING THE NEW NARRATIVE:

A CASE STUDY OF "SNOW FALL"

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The undersigned, appointed by the dean of the Graduate School, have examined the thesis entitled

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A CASE STUDY OF "SNOW FALL"

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DEDICATION

To Angus W. "Mac" McDougall who lit the fire and kept it burning.

ACKNOWLEDGEMENTS

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ABSTRACT

As newspaper organizations transition to an online environment the question of whether new digital communication methods enhance or diminish the ability of long-form narratives to convey their message coherently and meaningfully is increasingly relevant for both journalism and society. Using concepts related to framing theory, narratology, and medium theory, this case study of *The New York Times* Pulitzer prize-winning online presentation of "Snow Fall: The Avalanche at Tunnel Creek" analyzes the content, form, and context of its multiple media narrative—three basic structural properties of all communication—to discover how narrative coherence and meaning develop. Results indicate that joining competing media forms in accordance with fundamental narrative construction, presentation, and design principles aids semiotic potential and overall narrative coherence, and mitigates the disruptive effects of technology and interactivity; that the spatial relationships of multiple media constructions contribute to narrative's ability to tell coherent and meaningful stories; and that a newsroom organizational structure that facilitates a collaborative editing environment enables multi-skilled journalists to produce engaging multimedia narratives despite multiple layers of complexity.

Keywords: convergence, framing theory, medium theory, nonfiction narrative, narratology, semiology

INTRODUCTION

> Digital media do not simply place us in front of a static text: they situate us inside a system that continually produces a dynamic object. In the words of N. Katherine Hayles, 'We are the medium and the medium is us.'...But is the most distinctive property of digital media a boost, or is it an obstacle, to the creation of narrative meaning? When an interactive text achieves narrative coherence, does it do so by working with or against its medium? (Ryan, 2004, pp. 329-330)

Statement of the Problem

Contemporary news media are riding the crest of a powerful wave of social and technological transformation. The Internet/digital "revolution" of the late 20th and early 21st centuries caused what Tim McGuire, former editor and senior vice president of the Minneapolis Star Tribune, described as a "tsunami of digital and economic change" (2011, n.p.). In just two decades its force radically altered the speed and manner in which information was distributed and received, and changed both the quantity and the quality of that information. In 1993 the Internet carried only 1% of two-way telecommunications information. By 2007 it carried 97% (Hilbert & Lopez, 2011).

The arrival of digital technology and the Internet toward the end of the 20th century accelerated an already rapidly changing media environment and helped establish new narrative forms that involved readers in their construction. Just as the telegraph, telephone, radio, and television enabled individuals to overcome the limitations of time and space by engaging with information in "real time," the Internet enabled individuals to overcome the limitations of information access, distribution, and production by engaging directly with the media and with one another, thereby creating a "network society"

(Castells, 2009). The Internet changed the public's role from one of passive recipient of news and information to one of active creator and publisher, fostering a media culture where "many could share what they created" instead of one in which "many could consume what a few had created" (Jenkins, 2008, p. 253). The change triggered unforeseen consequences for traditional media, such as more competition and less control over how information was created and distributed.

In addition to these social and technological changes, a historic economic downturn brought declines in newspaper circulation, advertising, and revenue, and led to corporate decisions to merge or align with other media in an effort to find new revenue models and capture audience attention. Newspaper companies took advantage of the potential presented by organizational convergence, digital technology, and the Internet to combine different modes of communication within a "new media," believing that "convergence could be the savior of journalism in the 21st century" (Domingo et al., 2007, p. 2).

The consequences of change, however, are not always foreseen by those carried along in its wake. As newspaper organizations transition to an online environment to take advantage of the multi-dimensional nature of the medium, and as journalists experiment with new approaches to storytelling, they are discovering that creating and navigating these new, complex, experimental narratives requires new insights and new skills for them and for their readers. These new narratives are still evolving. What the future holds for long-form multimedia storytelling online will depend in part upon the ability of both journalists and their readers to understand how the structure and presentation of digital information influences narrative coherence and signifies its meaning.

Rationale for the Study

Snow Fall, The Avalanche at Tunnel Creek, written by *The New York Times* sports feature reporter John Branch, ran as a 14-page section in the newspaper and a six "chapter" presentation online. Its publication on December 20, 2012 received immediate critical acclaim, both for the quality of the writing and the beauty and sophistication of the online presentation.

The online presentation was called "striking," "brilliant," "gorgeous," and the "future of online journalism" (Greenfield, 2012, para. 1-2); a "miraculous mega-multi-media feature," "a visceral adventure story," and "something like magic" (Thompson, 2012, para. 1-2); "an incredible work of reporting [and] design" (Tufte, 2012, n.p.).

In the first six days that followed its online publication *Snow Fall* attracted more than 3.5 million page views and 2.9 million visitors (Romenesko, 2012). The story received considerable attention both from the public and the journalism profession and won numerous awards, among them: a Peabody Award that noted its "spectacular realization of the potential of digital-age storytelling" (University of Georgia, 2012, para. 1); a Pulitzer Prize that cited its combination of "evocative narrative" and "deft integration of multi-media elements" (McAthy, 2013, para. 7); a Scripps Howard Award for Digital Innovation that stated "'Snowfall' [sic], in particular, pulls you into the story and keeps you there—not with gimmicks but with carefully considered, even elegant techniques that guide you through a harrowing tale" (Scripps Howard Foundation, 2012, para 2.); a Punch Sulzberger Award for Online Storytelling; and a Webby award for Best Use of Interactive Video.

The response to the story in the journalism community was generally positive,

often effusive, although there was criticism as well. Atlantic senior editor Derek Thompson (2012) argued *Snow Fall* was not the future of journalism but an experiment by a news organization with plentiful resources most newspapers don't possess. Jason Del Ray (2012), writing in *Ad Age*, expressed disappointment that the advertising on the site was less compelling than the visual environment and questioned the use of the paper's resources. Paige Williams, writing for *Nieman Storyboard* said, "Almost every example of snowfalling that I've seen in action puts reading second to the razzle-dazzle" (Williams, 2013, para 1). Journalist Farhad Manjoo writing for *Slate.com* called it "just too big—too long, too visually distracting, too overproduced" (2013, para. 4).

Reader comments were mostly positive. Some readers said they preferred the videos and graphic treatment online to the written narrative (Sullivan, 2012, n.p.); some said they preferred the written narrative to the interactive media (Branch, 2012, n.p.).

The buzz about *Snow Fall* within the media community led former executive director of *The New York Times*, Jill Abramson, to declare "to 'Snow Fall' has actually become a verb"...[meaning] "to tell a story with fantastic graphics and video and every kind of multimedia and that is absolutely organic to the storytelling itself" (Martinez, 2013, para. 4).

The New York Times Pulitzer Prize nomination letter for *Snow Fall* stated, "rarely, we suspect, has there been a more fully realized partnership of fine writing and state of the art multimedia put before the [Pulitzer] feature's jury" (The Pulitzer Prizes, 2013, para. 18). The letter also claimed, "For those who had worried about the future of longer form storytelling in the digital age, the future had suddenly, spectacularly arrived" (para. 2).

The transition of information from print to online is more than simply a transfer of content from one medium to another. Online functionality brings new opportunities and new challenges to the journalists who produce and present information and new ways of accessing and interacting with information to the readers who consume it.

Mizell Stewart, E.W. Scripps Co. vice president of content/newspaper division explained that traditional journalism skills are not enough to insure success in today's digital news environment.

The range of skills necessary to navigate this transition goes far, far beyond bread-and-butter competencies such as writing, editing and practicing the discipline of verification. Teamwork and collaboration, audience engagement, marketing, project management, data journalism, video editing … the list goes on and on. Along the way, we also have to understand what it takes to build successful digital news and information businesses with revenue models that may be very, very different than the ones we know today. (Finberg, 2014, para. 50)

Today's journalists are experimenting with storytelling forms online, combining text with sound to convey immediacy and emotion, with video to depict subjects' expressions and deportment, and with motion graphics to explain complicated processes and events. Decisions about how to integrate these new storytelling forms into a unified narrative whole are sometimes arrived at through trial and error (C. Spangler, personal communication, March 3, 2014) and can be influenced by organizational pressures, such as established routines, journalistic values, and lines of authority.

The effect of these experiments on narrative syntax has not been studied

extensively. Research that explores the influence of multiple media structure and presentation on the coherence and semiotic potential of online narratives can help journalists understand the consequences, get ahead of the changes, and influence the outcome.

Purpose Statement

This thesis examines a single case in depth: *The New York Times* online presentation of *"Snow Fall: The Avalanche at Tunnel Creek."* Times reporter John Branch and the team of journalists who worked on the story spent several months gathering information for the project in hopes of producing an engaging online narrative experience.

The multiple media story is an in-depth analysis of decisions by a group of expert backcountry skiers that led to an avalanche and resulted in the death of three individuals. The project combines nonfiction narrative, photography, video, audio, and motion graphics in an eye-catching minimalist design using sophisticated Web development coding. Considering the rapid change in technology over the past decade, in its present form this type of storytelling is relatively recent. In addition to the compelling written narrative and motion graphics, what caught the notice of online readers and media pundits alike was the way multiple media elements were interrelated in the construction of long-form narrative.

The aim of this thesis is to explore how multiple media combine as narrative expression in an interactive online environment—how words, pictures, illustrations, and sound join together in harmony and scrape against each other in dissonance. It examines the effects of form and presentation on narrative coherence and semiotic potential, and it

considers the influence of organizational pressures on the decisions made by the individuals who practice multiple media storytelling. As a compelling example of long-form nonfiction multimedia storytelling *Snow Fall* provides an opportunity to examine the efficacy of online multimedia narrative. Using thematic analysis and interviews to explore these issues, this case study briefly compares *Snow Fall*'s presentation with *Punched Out*, a similar *New York Times* multimedia online presentation produced a year earlier by several of the same journalists.

Operational Definitions

Semantic change occurs over time altering both how words mean and how they are used. The rapidly changing nature of today's media environment has had an impact on the creation, use, and meaning of certain terms. Accordingly, this study applies the following contextual definitions to the terms below.

Narrative. A narrative is more than simply one thing following another, for example a list of information such as driving directions, food recipes, or product assembly instructions. A narrative tells a story through patterns of "consequential events" (Riessman, 1993, p. 2) connected within a temporal dimension (Lehtonen, 2000), traditionally with a beginning, middle, and end (Aristotle, 335 BCE/2000). Anything that relates a story can be considered a narrative and the words "story" and "narrative" can be used interchangeably (Bringhurst, 2002; Jahn, 2005).

Even though long-form narratives may appear different in print and online their functional roles are the same. Within its specific context, narrative of any type organizes content in a logical and predictable sequence and shapes the understanding of the text. A more expansive definition of narrative would include a fictional or non-fictional

structured representation or account of a person, topic, event, or experience.

The narrative style addressed in this thesis is long-form journalism or narrative nonfiction and follows Gutkind's definition of nonfiction narrative as fact-based stories about real people and events told in a dramatic manner, or "true stories, well told" (2012, p. 6). The goal, Gutkind stated, is "to make nonfiction stories read like fiction so that your readers are as enthralled by fact as they are by fantasy. But the stories are true" (p. 6). In an online context long-form narrative journalism can and often does include multiple media elements as well as text. This thesis considers two aspects of narrative: its structure or "the assemblage of material," and its rhetoric, or "how the narrative is presented to the audience" (Childs & Fowler, 2006, p. 148).

Multiple media narrative. The term medium refers to both a system of communication (such as newspapers, television, radio, the Internet, etc.) and the material or method of communication (such as writing, graphics, video, audio, photography, etc.). Multiple media narrative or multimedia narrative—two terms among many with varying shades of meaning—uses a variety of narrative forms or modes to tell a story in an integrated way across single or multiple digital mediums, although not necessarily structured in a traditional linear narrative sequence. Other labels include convergent storytelling, digital narrative, digital storytelling, electronic narrative, enhanced storytelling, interactive narrative, multimodal narrative, multipath narrative, multiplatform narrative, new narrative, and new media narrative.

This thesis follows literary theorist Daniel Punday's concise conception of multiple media narrative as "independent and *equally valued* [emphasis added] media forms cooperating in a single work" (2011, p. 22).

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Semiotic potential. Semiotics is the study of signs or sign systems. The semiotic potential of a narrative refers to its ability to signify its meaning or intent "plausibly out of what has come before" and to point, "to what might reasonably come next" (Berger & Quinney, 2004, p. 5). Combinations of different semiotic modes in a single long-form narrative can lead to narrative confusion and lack of coherence if not structured properly. To achieve their meaning making potential when joined together in narrative forms multi-media narratives must develop "a reasonably well-defined syntax and semantics" (Ryan, 2004, p. 44), or logical semantic structure between their various modes.

Narrative coherence. Although scholars consider James Joyce's stream of consciousness novel Ulysses to be a masterpiece of English literature, Virginia Woolf, who ranks Joyce among the greatest writers of her generation, called it "a memorable catastrophe" (Hall, 1967, para. 14). Joseph Collins in his 1922 review of the novel in *The New York Times* wrote, "That he [Joyce] has a message there can be no doubt." However, "The average intelligent reader will glean little or nothing from it" (para. 2).

Studies have indicated that stories are more easily remembered when presented in a coherent manner, suggesting "a sense of global structure aids comprehension" (Cohn, Paczynski, Jackendoff, Holcomb, & Kuperberg, 2012, p. 3). Although Ulysses lacks orderly continuity and logical progression, fragmented texts can be consequential and few would disagree that Ulysses is a literary work of major significance. However, linguistically based modes of communication are primarily linear and logical, and narratives that fail to signify a familiar "mental model" of reality based upon personal experience and expectations are not consistent with the way readers conceptualize, interpret, and communicate events in their daily lives (Seigel, 2012, p. 226). Although

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consciousness may function like a stream of disconnected thoughts and impressions, coherent thought and coherent narrative does not.

Coherence is a property of meaningful communication and is marked by "a logical, orderly, and aesthetically consistent relationship of parts" ("Coherence," 2014, n.p.). Psychologist Ruthellen Josselson recognized, "It is not the parts that are significant in human life, but how the parts are integrated to create a whole—which is meaning" (2011, p. 226). Swiss semiotician Ferdinand de Saussure considered that in meaning-making, "the whole depends on the parts, and the parts depend on the whole" (1983, p. 126).

Multimedia coherence is the effect of arranging multimodal elements as inter-related structures (Holliday, 2004) "such that everything in the arrangement gives the appearance of 'naturally' belonging together" (Hewitt, 2012, Para. 1). Multiple media narrative coherence is defined in this thesis as the orderly and aesthetically consistent arrangement of the parts of the narrative so that they are logically and conceptually meaningful and form an integrated whole.

Interactive. Although there are many definitions of interactivity, it can be broadly defined as the extent to which a computer and a computer user have a direct connection or "dialogue" in which the user is able to explore, influence, or modify the interplay of computer content ("Interactivity," n.d.).

From a user perspective interactivity is the ability of a computer user to explore, influence, or modify the flow of information. From the perspective of Web page design, interactivity can be seen as "the interplay of [multimedia] story elements" and the extent to which they "enhance the [multimedia] package in non-linear layers" (DeVigal, 2011,

Para. 7). In this sense it is the relationship between multiple media elements that makes them "interactive," (i.e. causes them to have an effect on one another). The interactive relationship between multiple media story elements is largely determined by how the Web page designer structures the presentation, including when, how, and if the computer user can engage or modify narrative story elements.

Structural principles: Content, context, and form. The medium of a narrative's transmission alters its context (the circumstances in which it is interpreted), influences its form (those elements related to structure), and affects its content (how its signs are organized). Content, form, and context create a narrative gestalt or unified whole where each influences the properties of the other and affects meaning. Literary scholar Marie-Laure Ryan stated, "The intrinsic properties of the medium shape the form of narrative and affect the narrative experience" (2004, p.1). For example, although the textual content of a book online resembles its text in print, because the medium (form) used to convey the information (content) is different, the relationship between the text and the reader (context) is different. In this particular sense, the medium shapes the message. The definitions of content, context, and form used in this study are borrowed from Belton (1996).

Content is a visual, aural, or written representation of something. In the broadest sense content is any semantic construct or sign. "Content means 'message' however that message may be organized" (Belton, 1996, para. 3).

Context is the "lens" through which something is produced and/or interpreted and acquires meaning. This study, for example, interprets *Snow Fall* through framing theory, narratology, and medium theory. In the context of narratology the structural relationship

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between semantic systems of signification is how content acquires meaning. In the context of framing theory the choices of what to include and what to leave out and the emphasis given is how content acquires meaning. In the context of medium theory the influence of technology on how content is presented, received, and experienced is how content acquires meaning.

Form has several meanings. In the sense intended by Belton and used in this study form is those elements related to structure or design that are independent of direct representational meaning but nevertheless convey meaning through interaction with content and context. Form influences content by how its constituent parts are put together. Form relates how things combine, primarily through traditional and Gestalt design principles, such as proximity, similarity, continuity, consistency, repetition, balance, contrast, and connectedness (Belton, 1996).

Outline of Chapters

This thesis is divided into seven chapters. Chapter 1 introduces the problem being studied, identifies the purpose of the study, and offers an explanation of the terms used in discussing the research questions. Chapter 2 discusses the theoretical framework used to examine multiple media narrative: medium theory, narratology, and framing theory. It considers the influence of technology on narrative form, discusses narratology and its relationship to the study of narrative communication, and considers the effect of framing on how narrative meaning is shaped. Chapter 3 presents a comprehensive review of literature. It outlines the importance of media convergence to the transference of news and information from print to online, introduces narrative journalism, discusses the benefits and problems associated with multiple media communication, describes

narrative's relationship to the Internet and to the organizational factors influencing it, and

states the research questions. Chapter 4 examines the methodology. It describes the

method of data collection and explains how data will be coded and analyzed using

interviews and thematic analysis. Chapter 5 provides details of the four themes that arose

from the case study interview responses and describes the structural components of the

Punched Out and *Snow Fall* presentations. Chapter 6 discusses the findings and compares

the choices made by journalists in the construction of multiple media narratives with the

scholarly literature reviewed and through the lens of narratology/semiotics, framing

theory, and medium theory. Chapter 7 is the conclusion and a synthesis of key points,

along with a listing of its limitations and suggestions for further research.

<div align="center">Chapter 2</div>

THEORETICAL FRAMEWORK

Qualitative research offers "a plethora of viewpoints, sometimes diametrically opposed to one another" (Guest, Namey, & Mitchell, 2013, p. 1). Although researchers select theories and methods that apply to the problems they are investigating, choosing a theory and method in large part determines what data is collected and how it is analyzed. This thesis uses medium theory, narratology, and framing theory to analyze multiple media storytelling online.

Medium Theory: What Hath Technology Wrought?

Marshall McLuhan's medium theory, popularized in the 1960s and sometimes referred to as technological determinism, prioritized media technology in effecting social change. McLuhan's famous statement, "the medium is the message," continues to be discussed and debated today, a period of media evolution in which "the media form has more effect on society than the contents carried, and…is now getting even more powerful as we become ever more reliant on technology" (Marsh, 2009, p. 271).

Technology, "the practical application of knowledge" ("Technology," n.d.), has always shaped communication. The invention of pictographs, which enabled pre-historic humans to create narrative sequences on cave walls more than 35,000 years ago (Grove, 1993), must have appeared wondrous to those who could understand their meaning. The narrative of early Greek philosophers, evident both in their "form of expression" and their "manner of thinking," reflected their oral tradition (Havelock, 1963, Introduction, p. ix). The technological invention of writing approximately 5,400 years ago eventually overthrew the primacy of oral narrative in Greek society and has been credited with

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"transform[ing] human consciousness" (Ong, 1982, p. 78). As narrative became primarily written rather than spoken it changed how knowledge was passed down from generation to generation.

> The shift from the word as event and living, as uttered and heard, to the
> word as seen, as thing, as having an existence apart from a person uttering
> it, as having a life independent of whatever anyone may say about it,
> brings into the world a distance, an objectivity to thought and language
> that is unheard of in oral cultures. (Andrews, 1988, p. 42)

Despite Socrates' contention that writing could cause people to become forgetful and no longer rely upon memory (Plato, 360 BCE/1995), writing extended human knowledge by enabling a more permanent recording and sharing of information. The transformative technology of writing, however, came gradually over many centuries. The phonetic alphabet remained "a specialized tool available only to manuscripters and clerics" until the mid-15th century when Gutenberg's printing press enabled a wider distribution of printed material (Doherty, 1995, para. 21). Even so, reading and writing remained mostly a privilege of the elite until the 19th century. As late as 1870 in the United States 19.7% of the adult population remained illiterate along with 79.9% of the black population (Bureau of the Census, 1949, p. 365).

Unlike past technological changes in communication, however, today's communication environment is evolving at an increasingly rapid pace and merely keeping up with it requires constant attention. In his book, Mediated, New York University professor Thomas de Zengotita noted:

> The real world is reconstituting itself on a plane that transcends ancient

solidarities of nature and custom, craft, and industry. The whole process

has been accelerated since the invention of modern communication

technologies (telegraph, photograph, telephone), and it crossed a

qualitative threshold in the past couple of decades, with the rise of new

media. (2005, pp. 17-18)

Samuel Morse, who is credited with creating the first single-wire electromagnetic

telegraph system, demonstrated the new technology on May 24, 1844 by sending a

message from the Capitol in Washington, D.C. to a rail station in Baltimore: "What hath

God wrought!" (Howe, 2007, p. 1). The biblical quote reflects both the wonder his

technological innovation brought and concern for what that innovation meant for

communication—the elimination of time and distance as limiting factors of information

transmission. Morse's invention was the beginning of a revolution in communication that

ultimately led to the Internet. One could argue that digital technology and the Internet

brought similar wonder and concern for their effect on the process of communication for

21st century consumers of new media.

Bailey Socha and Barbara Eber-Schmid of New Media Institute considered the

term "new media" to be "a 21st century catchall term used to define all that is related to

the internet and the interplay between technology, images and sound" (2012, para. 1).

The tools and processes of new media, they claimed, "change so quickly that it is

impossible to fully define just what those tools and processes are" (para. 6). Nevertheless,

they cited Wikipedia's conclusion that "What distinguishes new media from traditional

media is the digitizing of content into bits" (para. 2), which allows information of any

type and in any format to be combined and disseminated with equal efficiency (McQuail,

2010).

What is new about new media, according to Professors Jay David Bolter and Richard Grusin (1999), is that new media "refashions" old media. Web 2.0 technologies that developed in the late 1990s enabled individuals with limited technical skills "to upload and manipulate text with unprecedented ease," and made interactivity "the feature of digital media that most clearly distinguishes it from older, non-digital genres" (Page & Thomas, 2011, pp. 2, 12).

The difference between old and new media is in how media is produced, distributed, and consumed. Old media or traditional media—printed newspapers, printed magazines, books, television, film, radio, and sound recordings—is neither digitized nor available on the Internet. Old media is mostly produced by skilled professionals working for large organizations and distributed in a *permanent* form to a mass audience. However, old media becomes synthesized into new media when translated (i.e. digitized) into *modifiable* data for computer access by individuals specifically interested in the data.

Although new media has gained audience, influence, and revenue—sometimes to the detriment of old media—the ability to influence mass audiences mostly remains with traditional media (McQuail, 2010). New media can have mass media effects, such as when information "goes viral." Even so, old media often plays a major role in that process. A 2010 Pew Research Center report states, "More than 99% of the stories linked to [by blogs] came from legacy outlets like newspapers and broadcast networks. American legacy outlets made up 75% of all items [on blogs]. Web-only sites, on the other hand, made up less than 1% of the links in the blogosphere" (para. 29-30). Communication theorist Denis McQuail noted, "There are quite a lot of occasions,

especially in respect of learning and opinion-forming, when it is hard to see what else

other than the mass media could have caused the [media] effects" (2010, p. 534).

New media theory professor Lev Manovich saw new media as a convergence of

computing and media technologies, "a new media revolution—the shift of all culture to

computer-mediated forms of production, distribution, and communication." (2002, p. 19).

The computer, he claimed, is "no longer...suitable only for crunching numbers, it has

become...a media synthesizer and manipulator" (p. 26).

"The new language of the computer age," according to Manovich, is database (as

cited in Vesna, 2007, p. xv). In discussing new media Manovich was careful to

distinguish between the terms database (a collection of data) and narrative.

> As a cultural form the database represents the world as a list of items, and
>
> it refuses to order this list. In contrast, a narrative creates a cause-and-
>
> effect trajectory of seemingly unordered items (events). Therefore
>
> database and narrative are natural enemies. (Manovich, 2002, p. 227)

Manovich viewed database as a collection of items that changes over time and

basically lacks organization and structure, which he concluded contributes to the "anti-

narrative logic of the Web" (2002). Because new elements always can be added to a

database, Manovich maintained, "the result is a collection, not a story. Indeed," he asked,

"how can one keep a *coherent* [emphasis added] narrative or any other development

trajectory through the material if it keeps changing?" (p. 221).

> The space of the Web, in principle, cannot be thought of as a coherent
>
> totality: It is, rather, a collection of numerous files, hyperlinked but
>
> without any overall perspective to unite them. ...A user can easily add or

delete objects without taking into account the overall structure of the scene
[emphasis added]. (Manovich, 2002, p. 257)

Narratives on the other hand, select, organize, and connect elements and events giving them significance and meaning. It is the ordering of the data or elements that creates a narrative, and it is the responsibility of the author "to control the semantics of the elements and the logic of their connection so that the resulting object will meet the criteria of narrative" (Manovich, 2002, p. 228).

For Manovich narrative must satisfy criteria defined by literary scholar Mieke Bal: "It should contain both an actor and a narrator; it should have three distinct levels consisting of the text, the story and the fabula [the chronological sequence of events in a narrative]; and its 'contents' should be 'a series of connected events caused or experienced by actors'" (2007, p. 46).

Many new media objects do not tell stories; they do not have a beginning or end; in fact, they do not have any development, thematically, formally, or otherwise that would organize their elements into a sequence. Instead, they are collections of individual items, with every item possessing the same significance as any other. (Manovich, 2002, p. 218)

Manovich claimed many new media follow a "language-like" semiological order, "giving the user information one screen at a time." He suggested that new media has not yet developed a proper language to describe "these new strange objects" for which the term narrative is used as an "all inclusive term" (2007, p. 46).

The determination of whether new media are a cohesive or fragmentary social development is ongoing. Professor John Potts noted, "Every time it is claimed that digital

media have altered knowledge, communication or social interaction—for the better or for the worse—some form of medium theory, including a degree of technological determinism, is (usually unwittingly) invoked" (2008, n.p.).

The deterministic aspects of medium theory, however, have negative connotations for social theorists who hold that culture shapes technology rather than the inverse (Potts, 2008), and also for technology historians who reject the identification of technology as "the central causal element in the processes of social change" (Croteau, Hoynes, & Milan, 2012, p. 290). Understandably, social and cultural theorists and technological historians distance themselves from a theory that "assumes that technology is largely self-determining, an autonomous force that powerfully influences society without in turn being shaped by social factors" (Schatzberg, 1999, para. 4).

Communications professor J. D. Peters suggested technological determinism is "more often an accusation than a doctrine honestly advocated, and the threat of being called a 'technological determinist' often intimidates inquiry" (2011, n.p.). Technological determinism, he concluded, is in need of an intellectual and historic reevaluation.

Media professor Daniel Chandler asserted that technological or media determinism varies along a continuum and cited sociologist Ruth Finnegan's separation of it into two categories:

"Strong (or hard) technological determinism is the extreme stance that a particular communication technology is either a *sufficient* condition (sole cause) determining social organization and development, or at least a *necessary* condition (requiring additional preconditions)." Social theorists resist this viewpoint because, as Finnegan concluded, "If the strong case is to hold good, there should be no exceptions, or

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anyway none that cannot be explained away" (Finnegan, 1975, p. 107, cited in Chandler, 1995c, "Theoretical stances," para. 8, original emphasis). Chandler noted it is not difficult to find exceptions (1995c).

*"Weak (or soft) technological determinism…*claims that the presence of a particular communication technology is an enabling or *facilitating* factor leading to *potential opportunities* which may or may not be taken up in particular societies or periods (or that its *absence* is a c*onstraint*)" (Finnegan, Salaman, & Thompson, 1987, p. 38, cited in Chandler, 1995c, "Theoretical stances," para. 8, original emphasis). This variation is " less tidy and less generalizable than the 'strong case' but it is more in accord with the available evidence, and is more commonly accepted by social scientists" (Chandler, 1995c, "Theoretical stances," para. 7).

Communications professor Andrew Feenberg suggested a synthesis between the social constructivist approach, which holds that technology is shaped by social forces, and the technological determinist approach (or what he called the "subtantivist" approach), which holds that social forces are shaped by technology. A synthesis of both approaches, he argued, will "enable us to understand the central role of technology in modern life as both technically rational in form and rich in socially specific content" (1999, p. 95). "The tools we use," he stated, "shape our way of life in modern societies where technique has become all pervasive. In this situation, means and ends cannot be separated. How we do things determines who we are" (pp. 2-3).

Film and media studies professor Ben Roberts concluded there are powerful arguments for explaining culture and society "in terms of or as technical objects." Ultimately, he said, "It makes no sense either to talk of technics [i.e. technology in the

broader sense] determining culture and society or vice versa. Culture and society are not constituted by technics as if by a cause but rather constituted through it" (2012, p. 8). Cultural and technological practices in other words are interconnected, mutually affecting and influencing one other.

Despite the arguments about whether technology shapes culture or culture shapes technology, decisions about how to apply technology are made by individuals and whatever change occurs—intended or not—are the result of those decisions.

McLuhan stated that all media shape our perceptions. He believed the initial shocks of new technologies eventually diminish as they are absorbed by society, and it is in this adjustment period where revolutionary new perceptions occur. "We no longer feel the same, nor do our eyes and ears and other senses remain the same" (McLuhan, 1962, pp. 27-29). His statement that "All new media are extensions of some human faculty," reflected his belief that technology expands our capabilities by extending our senses (McLuhan and Fiore 1967, p. 26). He compared electronic circuitry, for example, to the central nervous system (McLuhan, 1964).

To a certain extent, our relationship to narrative and its effect on our senses has already been altered. Media scholar Henry Jenkins indicated "Just as the emergence of written language changes oral traditions and the emergence of printed texts changes our relationship to written language, the emergence of new digital modes of expression changes our relationship to printed texts" (2011, p. 19). Postmodern literary critic N. Katherine Hayles determined that text and technology are intimately bound together.

Since Aristotle, stories have been conceived as having a beginning, middle, and end. But in electronic hypertexts there often is no predetermined path,

so the narrative exists not as a set sequence but as a network of

possibilities that the reader can activate in many different ways. Because

the look and feel of these texts are intimately bound up with the

technologies used to produce them, technology enters the discussion not

only as a theme or subject, but also as a modality of production materially

affecting how the text signifies. (Hayles, 1997, p. 573)

Communication scholar Vincent Mosco, who was less enthusiastic about the

deterministic effects of technology, concluded "The rise of cyberspace amounts to just

another in a series of interesting, but ultimately banal exercises in the extension of human

tools." Nevertheless, he accepted that they were "potentially very profound extensions"

(2004, p. 119).

We are in the initial phase of multiple media storytelling online. Whether the

medium of communication is more important than the communication itself is arguable.

However, there seems to be agreement within the social sciences/communication fields

that the means of communication affects the meaning of communication. It is difficult to

argue that digital communication technology does not have an effect on society in general

or media in particular. Some media scholars have concluded, "At the present time the

most significant stories tend to flow across multiple media platforms" (Jenkins, Clinton,

Purushatma, Robison & Weigel, 2009, p. 46).

If media are indeed an extension of our faculties, what are the consequences

should technological advances in communication get ahead of our ability to absorb or

understand the change they foster? If the shock of new technologies has not yet

diminished to the point that our new perceptions have been able to fully form, can we

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keep pace with how multimedia narratives signify in an online environment?

Narratology and Semiotics: The Signs Are Everywhere

Narratives tell stories and storytelling is fundamental to the human condition (Sjoblom, 2005, p. 235). In the introduction to his book, Storytelling Animal: How Stories Make Us Human, Jonathan Gottsschall stated, "Story is for a human as water is for a fish—all-encompassing and not quite palpable" (2012, p. xiv). It is "not quite palpable," he said, because our daily lives are completely immersed in narrative. "We are soaked to the bone in story" (p. 18).

Throughout history narrative stories have been used to entertain, inspire, educate, persuade, and impart moral and social values. For French semiologist and literary theorist Roland Barthes "The narratives of the world are numberless…narrative is present in every age, in every place, in every society; it begins with the very history of mankind and there nowhere is nor has been a people without narrative. All classes, all human groups, have their narratives…it is simply there, like life itself" (1977/2004, p. 65).

Sociologists Ron Berger and Richard Quinney concluded that although narrative is generally "about stories and story structure" (2004, p.6) it is also about...

> ...imbuing 'life events with a temporal and logical order' [Ochs & Capps, 2001, p. 2], about establishing continuity between the past, present and as yet unrealized future, about transforming human experience into meaning. Narrative turns mere chronology—one thing after another—into 'the purposeful action of plot' [Taylor, 2001, p.2]. A coherent plot is one that has a beginning, middle, and end. It grows plausibly out of what has come before and points the way to what might reasonably come next. (p. 6)

The language we use—visual, written, or verbal—creates our stories, and to understand their meaning requires an understanding of the codes and structure of language. Symbols or signs are the codes language uses to represent concepts and ideas. One way we make sense of narrative is through an examination of its signification—the meaning found in its "signs" and the process by which they signify. Cultural theorist Stuart Hall (1997b) observed, "Signs stand for or represent our concepts, ideas and feelings in such a way as to enable others to 'read', decode or interpret their meaning in roughly the same way that we do. Language, in this sense, is a signifying practice" (p. 5), that is, it uses signs to produce meaning.

Theories of how signs signify meaning have existed since the time of the ancient Greeks (Baltzly, 2014). Perhaps the most succinct definition of the study of signs, or semiotics as it is known today, is Umberto Eco's: "Semiotics is concerned with everything that can be taken as a sign. A sign is everything which can be taken as significantly substituting for something else" (Eco, 1976, p. 7). In effect, "Anything can be a sign as long as someone interprets it as 'signifying' something" (Chandler, 2007, p. 13).

A fundamental concept of the study of signs is that things have no meaning in themselves but acquire meaning through cultures and societies (Howells & Negreiros, 2012, p. 118). A sign, therefore, is "an empty vessel until it is filled with meaning in order to signify" (p. 129). Hall notes that "Meaning does not arise directly from an object, 'the thing itself', but from the way in which an object...is represented in language, both oral and visual" (1997c, p. 4).

British philosopher John Locke first proposed the study of signs in 1690 in his

Essay Concerning Human Understanding (Peters, 2007). Signs, he wrote, "communicate our thoughts to one another, as well as record them for our own use" and "for the understanding of things" (Locke, 1690/1995, p. 607-08). Locke held there is a referential relationship between words and the ideas they represent and logic to that relationship, which enables them to form meaning (Peters, 2007).

Ferdinand de Saussure (1857-1913) and American philosopher Charles Peirce (1839–1914) generally are considered co-founders of semiotics (Chandler, 2007). The term "semiology" is associated with Saussure and the term "semiotics" is associated with Peirce, reflecting their respective scientific and logical/philosophical approaches to the study of language (Chandler, 2007). The term in general use today for the study of signs and sign systems is "semiotics" (Noth, 1990, p. 14).

Saussure developed the concepts of "signified" and "signifier" to depict the binary nature of the term "sign," the signifier being the phenomenon or form itself and the signified being "the concept or meaning embodied in a particular signifier" (Agawu, 1991, p. 16). Chandler explained that the written or spoken word "open" in reference to a store would be the signifier. The meaning of the form itself, that the store is open for business, would be the signified and would change depending upon the context in which it was used (Chandler, 2007).

In narrative text the signifier would be the discourse, form, or story and the signified would be the meaning or plot (Jahn, 2005). Novelist E.M. Forster explained the relationship between story (form) and plot (meaning):

We have defined story as a narrative of events arranged in their time

sequence. A plot is also a narrative of events, the emphasis falling on

causality. 'The king died, and then the queen died' is a story. 'The king

died and then the queen died of grief' is a plot. The time sequence is

preserved; the sense of causality overshadows it. ... Consider the death of

the Queen. If it is in a story we say 'and then?' If it is in a plot we ask

'why?' (Forster, 1927, p. 86).

It isn't simply the sequence of events that creates the story but also the plot, which

develops structural relationships between individuals and events that help establish causal

relationships in the reader's mind. Any sign system or combination of sign systems,

linguistic or non-linguistic, is capable of establishing causal relationships that lead to

signification. Although Saussure held that there is no natural connection between a

linguistic sign and its meaning (for example, different languages use different words to

describe the same concepts), linguistic signifiers presented in succession are

interdependent and linear in nature and develop meaning through their structural

relationships with one another (Peters, 2007). Signification or meaning in Saussure's

terms is the relationship between signified and signifier (Chandler, 2007).

For Saussure meaning results from the differences between signifiers, of which

there are two types: syntagmatic and paradigmatic. These are structural forms that

organize signs into codes or a set of conventions in order to make sense of them.

Syntagmatic differences concern positioning. Paradigmatic differences concern

substitution (Chandler, 2007).

A syntagm is "an orderly combination of interacting signifiers" which are related

or positioned within a text to form "a meaningful whole" (Chandler, 2007, p. 83-84).

They are organized sequentially and have meaning in their relationship to one another.

"The use of one syntagmatic structure rather than another within a text influences meaning" (p. 110).

A paradigm also shapes the meaning of a text. It is "a set of associated signifiers or signifieds which are all members of some *defining* [emphasis added] category, but in which each is significantly different" (Chandler, 2007, p. 83-84). Paradigmatic signification relates to substitution in which one sign replaces another. A sign can be said to be paradigmatic when it can be used in the same context as another sign but not at the same time (Chandler, 2007).

"Mary had a little lamb" is a syntagmatic structure. "Mary had a little lamb" and "Mary had a little dog" are paradigmatic differences. The sentence "Mary had a little lamb" *positions* signifiers sequentially in a complete sentence in which all of the signifiers can be used at the same time. The sentence "Mary had a little dog" *substitutes* one signifier for another (i.e. dog for lamb)—both signifiers cannot be used at the same time. In both instances though, altering the positioning, combination, or structure of the words alters the meaning.

Chandler noted that in visual communication paradigms involve differences in perspective (close up, long shot, etc.) and different media can be considered paradigms that "derive meaning from the ways in which the medium or genre used differs from the alternatives. Marshall McLuhan's statement that 'the medium is the message' can thus be seen as reflecting a semiotic concern: to a semiotician the medium is not 'neutral'" (Chandler, 2007, p. 85). The medium reflects a choice that affects signification.

Semiotics as conceived by Charles Peirce, described as the father of modern semiotics (Solomon, 1988), differs from Saussure's conception of a sign in that it consists

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of three interrelated parts rather than two: a sign, an object, and a referent. The sign is the signifier, the object is what is signified, and the referent is the understanding we have of the relationship between the sign and the object (Atkin, 2006, n.p.). For Peirce, "we think only in signs" (1894/1958, p. 302), which serve as mediators between an idea or thought and the object that establishes the idea—the signified (Peters, 2007, p. 5). Meaning making takes place in the minds of individuals when they connect the signifier (form) with the signified (concept). In Peirce's model, the meaning of a sign "is not contained within it, but arises in its interpretation" (Chandler, 2007, p. 32).

Harste, Woodward, and Burke (1984) used an example of preschoolers' response to a Crest toothpaste box to explain Peirce's concepts: "When shown the box, the child responds, 'brush teeth.' According to Peirce's model, the print and graphics on the box are the sign standing for something (the object or Crest toothpaste), and indicate a meaning derived or interpreted from the sign (brush teeth)" (cited in Peters, 2007, p. 5).

Following Saussure's conception of signs as structural elements that make up language and convey meaning through their relationship to other signs, "structuralism," a term coined by Roman Jakobson, held that the meaning of any cultural phenomenon is the product of a signifying system that can be discovered through the rules or "grammar" that structure its meaning (Leverette, 2003, n.p.).

Structuralist narratology, or structuralism, examines the grammar or syntax of "shared systems of signification" (Seiler, 2006, para. 8), viewing sign systems as languages (Chandler, 2007). Jakobson asserted that signs only make sense when related to the codes underlying their structure. Chandler explained: "In creating texts we select and combine signs in relation to the codes with which we are familiar," such as social

codes, textual codes and interpretive codes, thus limiting a texts' meaning (Chandler, 2007, pp.149, 150, 157). Structuralists search for these underlying patterns or codes within narratives to determine how they form into narratives.

Jakobson noted, however, that knowing the codes alone is not enough. It is important to know the context because codes operate "within a broad cultural framework" that leads to a subjective interpretation of meaning (Chandler, 2007, p.148). Manovich (2002) concluded that "A code is rarely simply a neutral transport mechanism; usually it affects the messages transmitted with its help" (p. 64).

Codes are "maps of meaning" that guide us in the interpretation of ideas and "imply views and attitudes about how the social world is or ought to be" (Streeter, 2012, n.p.). In semiotics a sign acts as a code and each medium has its own set of codes. Although mediums are different from one another they can substitute for one another within a multiple media narrative context, similar to paradigmatic signifiers. Combining mediums, as in multiple media narratives, requires an understanding of the specialized codes used by each medium (Howells & Negreiros, 2012). Multiple sets of codes, therefore, can potentially complicate the signification process depending upon how they affect the understanding of the overall message.

Saussure developed semiology as a system for understanding language. Barthes extended the system to include messages of all sorts (Seiler, 2006) and broadened the definition of a "text" in the semiotic sense to indicate a system of signs that refers to "anything which can be 'read' for meaning," including words, images, sounds and even gestures (Chandler, 2007, p. 263).

Barthes' perspective on narrative posited two types of texts: "readerly" texts in

which the writer or producer is the sign-maker and establishes the relationship between the signifier and the signified, and "writerly" texts in which the reader participates in establishing the relationship between the signifier and the signified. Readerly texts imply passive readers; writerly texts imply active readers (Chandler, 1995c, para 6).

> Texts of the readerly kind leave the reader 'with no more than the poor
> freedom either to accept or reject the text' (cited in Hawkes 1977, p. 114):
> they treat the writer as producer and the reader as submissive consumer
> and suggest their 'reflection' of 'the real world'. Texts of the writerly kind
> invite the active participation of the reader, and also, in their attention to
> linguistic mediation, an involvement in the construction of reality.
> Ironically, it is readerly texts which tend to be described as 'readable',
> whilst writerly texts are often referred to as 'unreadable' because they
> require more effort. (Chandler, 1995d, p. 6)

Barthes held that in the process of reading, "text is a galaxy of signifiers, not a structure of signifieds; it has no beginning; it is reversible; we gain access to it by several entrances, none of which can be authoritatively declared to be the main one" (1975, p. 5). This view seems to discard the structuralist concept of narratology as an examination of the parts of narrative to discover their relationships and function. How can a text have no structure, no beginning, middle, or end? Barthes' approach seems more a stream of consciousness structuralist perspective, where one can engage a flow of thoughts, sensations, and images at any point along a narrative continuum.

Media studies professor Dino Felluga explained that according to Barthes' logic, "there is no necessity that we begin a story at the beginning and proceed to the end; 'a

writerly text,' according to Barthes, has multiple entrances and exits. Barthes therefore chooses to cut up the texts he analyzes into 'contiguous fragments,' which he calls lexias or 'units of reading' or 'starred' segments" (2011, "Barthes: On plotting," para. 1).

For Barthes, narrative events consist of "kernels," which establish a story's coherence and cannot be eliminated without destroying the narrative logic, and "satellites," which embellish the plot but can be eliminated without destroying the narrative logic, although it will diminish the narrative aesthetically (Chatman, 1980, pp. 53-54).

Barthes' notion of narrative seems applicable to many of today's online narratives, which enable readers to begin the reading process from different locations within the text and interrupt the "natural" narrative process by clicking on a hypertext link or video or picture gallery. Felluga explained Barthes approach: "Rather than see this situation as limiting…he argues that we should take this plurality of codes as an invitation to read a text in such a way as to bring out its multiple meanings and connotations" (Felluga, 2011, "Barthes: On plotting," para. 1).

In the scheme of 21st century multiple format, interactive, new media narrative, Barthes seems ahead of his time. Postmodern literary critic N. Katherine Hayles referenced both Jay David Bolter's (1991) and George Landow's (1997) conclusions that Barthes description of "'text" in his 1986 essay *From Work to Text* "uncannily anticipates electronic hypertext," where every point can be connected to any other point (2004, p. 68). Hayles added that, "twenty years before the advent of the microcomputer, his [Barthes] essay stands in the ironic position of anticipating what it cannot anticipate," meaning its discussion of multiple authorship and rhizomatic structure (p. 68). However,

Hayles also noted that while Barthes' idea of textuality may have helped expand its definition beyond the printed page, it remains rooted in print culture because he defines it "through its differences from books, not through its similarities with electronic textuality" (p. 68).

Another semiotic approach is the social semiotic multimodal perspective, which examines the process of signification in multimodal compositions within a social context (Jewitt & Kress, 2003). Unlike traditional compositions that use the modalities of words and images, multimodal compositions involve any combination of words, still and motion pictures, sound, or animation. Communications professor Gunther Kress noted that multimodal communication requires "a division of semiotic labor" in which images, text, and other signifying systems create meaning by "doing different kinds of semiotic work" (2010, p. 1), which reflects Barthes notions of kernels and satellites.

Different modes convey meaning differently. Kress, following Saussure, determined that it is incorrect to assume that signification translates directly from one language or one mode to another and showed that different societies develop different meanings based upon semantic distinctions (2010, p. 9).

"Language," Kress wrote, "isn't a big enough receptacle for all the semiotic stuff we felt sure we could pour into it. ... There are domains beyond the reach of language, where it is insufficient, where semiotic-conceptual work has to be and is done by means of other modes" (2010, p. 15).

In the construction of meaning the sign-maker establishes the relationship between the signifier and the signified, not only what is signified but how it is communicated (Peters, 2007, p. 11). The sign-maker, in other words, frames the

information by determining what is signified, what signifier is used, and the circumstances in which it is used (p. 11).

> For meaning making to be possible, human cultures need and do provide means for *framing* aspects of the world to which an individual needs or wishes to attend. A culture will therefore provide its distinct semiotic resources for *framing* (complexes of) signs: what sorts of things are framed, how they are framed, what kinds of frames there are, and so on, and these will vary from culture to culture. Expressing this starkly: there is *no meaning without framing*. (Kress, 2010, p. 10, original emphasis)

The structural relationships of texts are also signifying relationships. Blumer (1969), Gitlin (1980), Iyengar (1991), Entman (1993), and others have shown that how stories are framed influence how audiences think about those stories. In the construction of multiple media narratives the creator/producer/author who establishes relationships within the text, as well as the designer who establishes the relationships between multiple media sign systems, and the reader who engages and interprets the text within a social context, are sign-makers who influence meaning.

Narratology considers how these structural relationships combine as a whole to create meaning and coherence by dissecting narrative elements into their component parts (Jahn, 2005, para. N2.1.1). A semiotic analysis of both the content and form of narrative is the province of narratology, a subset of semiotics. The term was coined in 1969 by Franco-Bulgarian philosopher Tzvetan Todorov (Prince, 1995) and is associated with Russian scholar Vladimir Propp (1984), who analyzed narrative components of Russian folktales. The term originated in French structuralist attempts to use linguistics to study

cultural phenomena and refers to "not what narratively organized sign systems mean but rather with how they mean as narratives" (Herman, 2008, p. 575). As such, narratology can be considered a theory of narrative (Prince, 1995).

Narratologists such as Todorov and semiologist Barthes viewed stories "as individual 'narrative messages' supported by a shared semiotic system whose constituents and combinatory principles it was the task of narratological analysis to bring to light" (Herman, 2008, p. 571).

Semiotics examines the building blocks of communication—its signs and underlying codes—in order to discover relationships. Narratology analyzes how the constituent elements of narrative combine in order to discover relationships. How these elements and building blocks combine, verbal and non-verbal, make up part of a general system of signification or communication system. One could say that narratology seeks meaning through an understanding of overall narrative form or structure, and semiotics seeks meaning through an understanding of a sign's generally accepted criteria or codes. Form provides a framework within which narrative makes sense; codes provide a framework within which signs make sense. Narratology relates semiotic principles to narrative syntax (the structure of signs and sign systems) and shows how they join to create meaning.

Film Studies professor David Bordwell maintained that structure is "function driven" and analyzing structure according to the purpose it serves provides a "functional explanation" of meaning (2004, p. 204). Semiotics analyzes sign systems within specific social contexts to understand how their codes signify meaning. Narratology analyzes narrative structure to understand how its components come together to establish meaning.

Just as there is a connection between language and meaning there is a connection between form and meaning. It is in this sense—an examination of the functional relationships between the parts—that narratology serves as a theory of the structures or forms of narrative.

Meaning in multimedia narrative can depend upon a combination of forms or be self-contained within each individual form. A video, for example, can stand alone as a separate narrative or it can accompany a written narrative, thus constricting or expanding narrative meaning. Multiple media narratives employ a wide variety of forms: text and images; text and audio; text, still pictures, and video; text, still pictures, and interactive components, et cetera. The "same" narrative can exist in many different forms. Star Wars, for example, was published as a comic book, a novel, a movie, a game, and other media. Narratologist David Herman (2008) explained, "The narratologist studies what allows a constellation of verbal or other signs to be construed as a narrative in the first place" (p. 575).

Contextual meaning (both literal and interpreted meaning) is "given by the whole context, by the universe of discourse" (Jakobson, 1973, p. 320). Meaning is arrived at through an analysis of everything that surrounds a particular word, text, passage, narrative, or presentation. All of the elements of a "text" contribute to its meaning, both denotative and connotative, including multiple systems of signification and how they are structured or integrated into the text.

> Every material act and sign can be, and usually is, construed in relation to
> more than one system of sign relations (e.g. a written word is both a
> linguistic sign and a visual orthographic one; a spoken word is also

construed in relation to its non-linguistic acoustical qualities; an image is

interpreted both visually and usually also linguistically; etc.). Therefore it

becomes important to study how different sign-systems are physically and

semiotically integrated in texts and multimedia productions of various

kinds. (University of Twente, "Semiotic Theories," 2010, n.p.)

Framing Theory: Giving Meaning to Meaning

Meaning is malleable. "When you put four edges around some facts," famous

street photographer Garry Winogrand said, "you change those facts" (Belt, 2013, p. 1).

The framing of information affects its interpretation. In mass communication research,

framing theory studies concepts related to how this takes place.

Framing is closely related to a number of theoretical approaches: agenda-setting

("the intentional creation of public awareness and concern of specific salient issues by

news media"); gatekeeping (the ability of media to control the public's knowledge of

events by controlling the information that is distributed); cultivation theory (which

"suggests that television is responsible for shaping or 'cultivating' viewers' social

reality"); and priming ("enhancing the effects of the media by offering the audience a

prior context – a context that will be used to interpret subsequent communication")

(University of Twente, 2010, "Levels of theories," n.p.).

In a media context framing has two distinct meanings. The first concerns how the

media in its interaction with society shapes or "frames" much of what the public

understands about daily events through the information it chooses to report and how it

chooses to report it. Framing considers both what is included and what is not included

when journalists construct social narratives to explain the world (Reese, 2001, p. 11).

Journalists can shape news and information by presenting or structuring it in a particular way. In framing, "The media focuses attention on certain events and then places them within a field of meaning" (University of Twente, 2010, "Framing," n.p.).

The second context concerns how people shape or interpret the information they receive through their experiences (McQuail, 2010). Herbert Blumer, a student of sociologist George Herbert Mead, stated, "One can see the empirical world only through some scheme or image of it" (1969, p. 24). Blumer, who coined the term "symbolic interactionism," maintained that people derive meaning through their social interaction with other people and things, and modify their interpretations based on that interaction. Erving Goffman (1974), considered one of the originators of the theoretical concept of framing, echoed Blumer in defining framing as a method of interpretation that enables people to identify life experiences. Robert Entman professor of communication at George Washington University, expanded on Goffman's definition, and stated that framing "promote[s] certain facets of a 'perceived reality' and make[s] them more salient in such a way that endorses a specific problem definition, causal interpretation, moral evaluation, and/or a treatment recommendation" (1993, p. 51). Journalism professor Todd Gitlin concluded, "Media frames are persistent patterns of cognition, interpretation, and presentation, of selection, emphasis, and exclusion, by which symbol-handlers routinely organize discourse, whether verbal or visual" (1980, p. 7). Simply put, framing occurs when certain aspects of reality become more salient through emphasis and attention.

Philosopher, mathematician, and computer scientist Hilary Putnam asserted in his study of the meaning of meaning that "Meanings don't exist in quite the way we think they do" (1975, p. 132). Meaning is open to interpretation.

The meaning attached to information, either by the originator or by the recipient, helps determine both its salience and the amount of attention it receives. Framing theory applies principles already held by individuals, groups and societies in the "selection, emphasis, and presentation...[of] what exists, what happens, and what matters" (Gitlin, 1980, p. 6) to examine how they make certain aspects of reality more salient.

Communication theorist Denis McQuail cited ample evidence to suggest journalistic frames guide audiences: journalism professors Carol Schwalbe, Susan Keith, and B. William Silcock (2008) showed that in the early weeks of the US led invasion of Iraq the Bush administration was able to frame the war in ways that helped generate public support—for example, the Pentagon and the Bush administration supplied the media with the "shock and awe" narrative that extensive bombing would erode the enemy's will to fight and bring a quick end to the conflict; Kathleen Jamieson and Paul Waldman (2002) attributed the success of George W. Bush in his challenge to Al Gore and the 2000 election results to the way the issue was framed by the "elite media" after the certification of the Florida vote; negative framing effects were observed by Joseph N. Cappella and Kathleen Jamieson (1997), who concluded that consistent framing of political news to gain political advantage results in cynicism, which leads to mistrust or social disengagement; and Political Science and Communications professor Shanto Iyengar (1991) concluded the way news about social issues is framed can influence the likelihood that audiences blame the victim for their troubles—think New Orleans after Irene, Romney's 47%, Obamacare, "welfare queens," et cetera (McQuail, 2010, pp. 511-512).

Media organizations frame meaning simply by the fact that they choose who,

what, when, where, why, and how they cover and report the news. Framing issues give

media the ability not only to influence what topics are presented to the public by

choosing one topic over another topic, but also to influence how the public perceives

topics by determining the language or structure used to explain it. Media, accordingly,

can both set the agenda and determine how it is discussed. "A medium," Chandler

asserted, "closes some doors as well as opening others, excludes as well as includes,

distorts as well as clarifies, conceals as well as reveals, denies as well as affirms, destroys

as well as creates" (2007, p. 9).

A text's meaning is determined in part by the medium that encodes it. The

particular medium chosen by news organizations to present information, therefore, has a

significant influence on meaning. A speech delivered as an address at a political

convention, for example, "means" differently from the identical speech printed in a

newspaper, broadcast on radio or television, or presented in both written and/or visual

form on the Internet. The "live" speech provides an emotional immediacy derived from

direct experience that colors its meaning in ways not possible in other mediums. Each

medium affects meaning differently and the medium in which information appears is as

much a part of its value as how the information appears within that medium.

Stuart Hall explained:

Things 'in themselves' rarely if ever have any more single, fixed and

unchanging meaning. ... It is by our use of things, and what we say, think

and feel about them—how we represent them—that we give them a

meaning. In part, we give objects, people and events meaning by the

framework or interpretation which we bring them. ...In part we give things

meaning by how we represent them." (1997b, p. 3)

Media organizations know as well as politicians that when you shape or frame an issue to some extent you control the issue. And even though the ultimate decision to accept a message may reside in the hands (or minds) of the audience, the media's power to control the amount and the quality of the information distributed is substantial. The presentation of information, along with the perspective brought to it both by journalists and audiences, influences reader response to the issues (Nabi, 2003, p. 225). As McQuail noted, "more effects from media occur as a result of defining situations and framing reality...than from persuasion or stimulation to action" (2010, p. 463).

Ironically, due to the wealth of information available today, media can actually reduce the power, effectiveness, and efficiency of their message by generating "noise" in the form of competing simultaneous messages. Shortly after Mitt Romney's acceptance speech at the Republican National Convention, MSNBC commentators provided an immediate analysis and critique. While they were analyzing the speech and attempting to frame its meaning, tweets about the speech from citizens, political pundits, and journalists scrolled across the TV screen (Figure 2), sometimes contradicting what the commentators were saying at the time. A 2011 Pew Research Center study stated that tweeting, "with its trim 140-character format...readily invites the instantaneous observation" (para. 8), suggesting the possibility that tweets flowed back and forth between "political junkies" watching the program at home.

Perhaps even more confusing, during what many said was the most important speech of Romney's career, Fox News scrolled news texts across the bottom of the screen as Romney was delivering his acceptance speech (Figure 3). The news was substantive

and potentially distracting, including a scroll about a proposed amendment to the U.S. Constitution. Kansas State University journalism and mass communications professors Lori Bergen and Tom Grimes, who collaborated with research firm Newslab in a study on distracting visual information on television, concluded that text crawls are "conflicting bits of information that don't hang together semantically [and]...make it more difficult to attend to what is the central message" being broadcast (Kansas State University, 2005, n.p.)

Audience attention deficit could become a growing problem in multimedia journalism. Behavioral studies indicate when visual attention focuses on more than one location across a visual field there is "a loss in spatial resolution and processing efficiency" (Castiello & Umilta, 1990, 1992; Eriksen, 1990; Eriksen & Murphy, 1987; as cited in Carrasco, 2011, p. 1487). When this happens involuntary shifts in attention occur, even when the visual cues "are known to be uninformative and irrelevant" (Carrasco, 2011, p. 1488).

Where Huntley and Brinkley once provided commentary without interference from anything other than a commercial break, today's media commentators must contend with scrolls, tweets, and frequent commentary from both pro and con pundits, politicians, and "thought leaders," in addition to commercial interruptions. The influence of the journalists in framing the message can be seriously affected. The media itself is largely responsible for this message interference—both affected by it and part of it.

The media's function as a repository of an ever-increasing avalanche of information gives it tremendous power to shape and control the message, both positively and negatively. McQuail (2010) concluded, "There is no doubt that owners in market-

based media have ultimate power over content and can ask for what they want to be included or left out" (p. 291). He indicated there is "plenty of circumstantial evidence that this power is used" (p. 291). Nevertheless, like message interference, there are moderating factors that can reduce or even negate this power.

Perhaps, as McQuail (2010) suggested, the "effects of mass communication are difficult to access" and "we hardly have the methodological capacity to measure larger trends at the higher level of analysis with any reliability and have to depend on theory and argument" (pg. 500). Still, in spite of the imperfect nature of the media—and partly because of it—both conventional media and new media appear more ubiquitous and powerful than ever in their ability to frame information.

Framing theory indicates that the presentation of news and information—not simply what is communicated but how it is communicated—affects its meaning and comprehension. Researchers Vincent Price, Elizabeth Powers, & David Tewksbury's 1997 study on the impact of news frames on reader response concluded, "Although reporters and editors may not be the driving engines of audience decision making, they may nonetheless have some capacity to guide those engines by switching tracks" (p. 504). How something is presented affects how it is received, which in turn can affect the choices individuals make and their understanding of the issues.

While this may be true, the public is not merely a passive consumer of spoon-fed information cooked up by the media. Entman (1993) concluded media consumers have a say in determining how information is framed and how it "means." Communications professor Donis A. Dondis (1973) also emphasized the importance of the reader to the process of the construction of meaning. In *A Primer of Visual Literacy*, she explained that

by virtue of their participation in the communication process readers in effect frame or construct the composition of the information and become co-authors.

The effectiveness of media framing depends in large part on the attention message recipients give to the content, how well they understand the message, and their ability to recall it (McQuail, 2010). In addition, individuals have the ability to accept or reject media's attempt (intended or not) to guide them in structuring information and meaning. Hall suggested, "Meaning is a dialogue—always only partially understood, always an unequal exchange" (Hall, 1997b, p. 4). Ultimately, whether framing is successful or not depends in part on several factors: how powerful the message is; how trustworthy the source is; how often the message is repeated; how knowledgeable recipients happens to be; how much acceptance the message receives from the elites (politicians, intellectuals, social leaders); how closely the message aligns with accepted social norms; what groups or organizations the message recipients belongs to; and the beliefs, attitudes, and opinions recipients hold (McQuail, 2010, pp. 509-512). It is quite a complicated process, which may or may not yield the results intended by the media.

Although there are many meanings attached to information, meaning is not contained within the information itself. Meaning is given when information is created, distributed, and received. Framing theory demonstrates that the presentation of information, along with the perspective brought to it by journalists and audiences, and given to it by the medium in which it is transmitted, influences the response to the information (Nabi, 2003, p. 225). Similar to Winogrand's observation of visual images, framing interacts with our experiences in a way that "remarkably affects our perceptions" (Hameed and Zubair, 2011, pp. 73, 77).

Different ways of framing content enable different interpretations; different combinations of words or signs (i.e. the syntax of language or "texts") construct different meanings; and different technologies materially affect narrative structure and how things signify. McLuhan noted, "It is the framework which changes with each new technology and not just the picture within the frame" (McLuhan & Zingrone, 1995, p. 273).

Framing theory, narratology/semiotics, and medium theory are 20th century theories grounded in the social and cultural conditions in which they formed, but the ideas they offer for contemporary multiple media narrative communication are not worn-out theoretical concepts. Among other things, they demonstrate that the signification of narratives cannot be separated from how they are structured or from the medium in which they are presented; that narratives should be thematically unified and logically constructed; that traditional principles of narrative construction (e.g. having a beginning, middle, and end) enhance message clarity and reader comprehension; and that inclusion of extraneous, superfluous or distracting elements complicate narrative clarity and meaning. Old media world communication theories still resonate in today's new media world, and the concepts they provide for the construction and understanding of multiple media narratives remain meaningful and relevant.

Chapter 3
REVIEW OF LITERATURE

Narrative's Technological Turn

  Something gained, something lost. Technology is transformational: It changes what it touches. McQuail (2010) concluded, "Each new medium transcends the boundaries of experience reached by earlier media and contributes to further change" (p. 125). This is evident from the earliest technological innovations, including those affecting communication such as language, writing, and printing.

  Many scholars considered the development of language sometime between approximately 25,000 and 180,000 years ago as marking the transition from archaic to modern humans (Logan, 2010) and the beginning of "homo narrans," humans as storytellers (Fisher, 1984). McLuhan considered language "the first technology by which man was able to let go of his environment in order to grasp it in a new way" (1964, p. 64). The development of a system of writing approximately 3,200 years ago eventually established a system of record keeping that enabled the preservation of information and helped establish large, stable communities (Man, 2002). The invention of printing in the mid-fifteenth century led to the modern era and the development of history, science, and literature (Man, 2002). The development of the telegraph in 1844 transformed communication from a print medium to an electric medium (Logan, 2010).

  Innovation, however, does not always lead to improvement and new technologies can create new and unanticipated consequences. Although the pace of technological innovation in the past 100 years has surpassed that of the past 50,000 years, what appears to be beneficial over a short time frame may in fact turn out to be harmful over the long

run, or vice versa. In his study of the nature of technology Peter H. Kahn Jr. (2011) concluded technological innovation may result in the loss of a previous form of experience that is often more natural and sometimes better for us.

The use of fossil fuel and chemical technologies, for example, has had both significant benefits and serious consequences for humanity in the modern era. Fossil fuels power the world's economic engine, but also contribute to pollution and global warming. Chemicals help fight disease and improve agricultural productivity, but also are toxic to humans and the environment.

Within the relatively short period of its existence the Internet has had both positive and negative consequences for our relationships with business, government, society, and one another. The Internet connects societies throughout the world, enabling individuals, organizations, and governments to share information about themselves in real time on a local, national, and international scale in ways never before possible. Conversely, it has enabled spying by individuals, organizations, and governments; spread misinformation and hate-filled rhetoric on a global scale; and generated concerns for corporate, government, and individual privacy and security.

As for narrative, technology enabled the printed word to largely replace the oral tradition of storytelling, which extended the reach of narrative communication but significantly reduced the capacity and "special pleasure" of oral storytelling (Kahn, 2011, p. 33). Whether or not recent technological developments ultimately are "better for us" has yet to be determined. But as Kahn points out, "There are costs that accompany almost every technological innovation" (p. xviii).

Nevertheless, narrative journalism would appear to have a secure place in the new

Internet age. It doesn't face the limitation of space that print imposes upon its form, and it can include additional information via audio, video, motion graphics, and links ("hyperlinks") to other files, documents, or website locations that support or extend the narrative. Such a wealth of instantaneous "intelligence" far surpasses anything a reader can experience in a newspaper or magazine, on TV, or the radio. Being able to connect to other Web locations from within an article is both figuratively and literally like having the Library of Congress at our fingertips. This ability provides readers with the power to control how much or how little additional information they want to receive, and frequently the order and form in which they wish to receive it, such as through links to photographs, video, graphics, or additional texts.

Internet technologies, however, can act as "structural constraints" that "both enable and limit human action" (Croteau, Hoynes & Milan, p. 287). Hyperlinks that allow readers to reconfigure the syntactic order in which multiple media narratives are constructed, for example, also present navigational challenges to the reading process that may destroy established hierarchies and affect coherence and meaning (Rose, 2012, p. 111). The hyperlink connections readers make when reading multiple media narratives are not the same as the story connections readers make on their own. New media theorist Lev Manovich (2002) indicated the process of hyperlinking is in reality an illusion because users are simply following a path already designed for them, which "objectifies the process of association" so that "we are asked to mistake the structure of somebody's else mind for our own" (p. 61).

Although linearity may not be a required component of narrative coherence, a logically structured account of events is essential. In typical narrative form—prose,

poetry, or film (linear or nonlinear)—the narrator organizes content so that it makes sense as presented. When readers alter the syntactic relationship (i.e. its construction or structure) between narrative elements, the narrative may or may not result in a coherent story. Regardless, the content is not organized as originally presented. If the relationship between the elements of a narrative plays a crucial role in determining meaning, as some have claimed (Landow, 1992; Ryan, 2001), rearranging a narrative's syntax potentially changes its meaning.

Nicholas Carr cited research that indicates we "may be in the midst of a sea change in the way we read and think" as a result of our relationship with reading online (2008, para. 7). According to Carr, some researchers warn that humans may be developing "digital brains" with new circuits for skimming through the torrent of information online. "Our ability to interpret text, to make the rich mental connections that form when we read deeply and without distraction, remains largely disengaged" (para. 9). This alternative way of reading, he stated, competes with our traditional deep reading mental connections developed over several millennia.

A 2008 study by the Associated Press and Context-Based Research Group found that when reading online "people aged 18-34 are overloaded with facts and updates and have trouble connecting with more in-depth stories" (MacMillan, para. 2). A 2013 Scientific American article cited laboratory experiments, polls, and consumer reports that indicated reading long texts on a computer or e-book screen presents navigational difficulties, inhibits reading comprehension, and may "drain more of our mental resources while we are reading and make it a little harder to remember what we read when we are done" (Jabr, 2013, para. 6).

This ability to make "rich mental connections…without distraction" is important to reading long-form, multiple media narratives online. Combining visual and audio information with written narrative online puts additional demands on both journalists' skills and readers' attention.

To maintain the connection to readers and advertisers so important to journalistic and financial success online, news organizations seek the online equivalent of the Holy Grail—reader engagement. Reader engagement implies an emotional and/or cognitive involvement or commitment leading to meaning making (Evans, 2008; Darley, 2000). Communication professors Michael D. Slater and Donna Rouner (2002) indicated that narrative engagement depends on two conditions: reader interest and the quality of the narrative. They concluded, "in the absence of absorption in the narrative, no persuasive impact of the narrative is likely" (p. 177-178). *New York Times* vice chairman Michael Golden stated, "Engagement is the proxy by which people value content" (Grueskin, Seave, & Graves, 2010, p. 34). However, engagement is not always easy to achieve online.

New media rarely provide the immersive experience found in traditional platforms. Many users keep numerous sites open on tabs in their Internet browsers and don't focus on any one for very long; they often come to a news site through a search and quickly leave for another. Links to other sites provide value to readers but also send them elsewhere, sometimes never to return. (Grueskin, Seave, & Graves, 2010, p. 16)

Studies cited in this thesis indicate that some of the technologies of online communication can interfere with audience interaction and consequently audience

understanding (Nerone & Barnhurst, 2001; Todorov, Chaiken & Henderson, 2002). Other studies suggest that message credibility is affected by the aesthetic qualities of online design, the positioning of non-news elements in proximity to news, and extensive interactivity that requires readers to take some type of action (Rice, 1999; Schoenbach, de Waal, & Lauf, 2005; Lister, Dovey, Giddings, Grant, & Kelly, 2009; Slater & Rouner, 2009; Carrasco, 2011; Santana, Livingstone, and Cho, 2011). Requiring journalists to take on too many specialized tasks and job functions with too little training can compromise both the quantity and the quality of the journalism produced (Quinn, 2005; Russial, 2009). Blurred lines of authority in the news organization over the creation and presentation of journalism online can lead to conflict and dissention over roles and approaches to newsgathering (Basen, 2012, Russial, 2009). Journalism analyst Peter H. Martyn (2009) suggests what's needed to improve both journalism and its bottom line may require "a reconceptualization of traditional journalism" (p. 208).

The promise and perils of consolidation. While the available technologies within a culture are important, "what that culture chooses to do with those tools matters more" (Jenkins, et al., 2009, p. 8). The real impact of media technologies as "agent of change," according to literary historian Harvey Graff, is determined by the way they are exploited (1987, p. 19). One way in which news organizations exploited technology at the turn of the 21st century was through media consolidation or convergence.

A definition of convergence in a news media context is somewhat nebulous: It can be viewed from many different perspectives. Multimedia professor Steven Quinn notes convergence has "almost as many interpretations as it has advocates" (2005, p. 30). This thesis considers convergence from the perspective of the media and the audience.

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Both provide salient operational definitions.

From a media perspective convergence implies cooperation among different media organizations or a coming together of various news mediums and technologies within a single organization with the intent of sharing both news content and news resources in order to increase efficiency, reduce costs, and gain audience. Essentially media convergence is a "blending" of different media platforms and their technologies, professional media skills and roles, and social and cultural influences (Domingo et al., 2007; Erdal, 2008). Media convergence is an ongoing process that allows multiple media systems to "coexist" and for content to "flow fluidly across them" (Jenkins, 2008, p. 322).

From the audience perspective convergence implies an interactive relationship between media and audience, often designed to share information or content. Media scholar Henry Jenkins argued that convergence should be considered a cultural shift heavily dependent upon the active participation of the audience rather than a technological process. Convergence, he maintained, occurs "within the brains of individual consumers" rather than through "media appliances" (2006, p. 3). He considered convergence to be "an ongoing process" rather than "a fixed relationship" between media systems (p. 282).

Economic decline made convergence necessary, technological innovation made it possible. Decisions by media organizations to facilitate convergence were made in the midst of a rapidly evolving economic and media environment: Convergence in newspaper companies came in response to substantial declines in readership and advertising (Bock, 2011). Responding to both the downturn in the economy and the

promise that convergence held "to maximize capital accumulation" (Jambreiro, Ferreira, & Barros, 2011, p. 53), media organizations merged combinations of newspaper, television, and online news operations, or aligned themselves closely with other media.

Two important technological catalysts for media convergence were the transfer of information into digital formats that could be utilized by computers, and the development of high-speed multimedia networks that could efficiently transmit digital information (Kung, Kroll, Ripken, & Walker, 1999). Jenkins differentiated between convergence, which he considers positively as "a moment of media change…defined through the layering, diversification, and interconnectivity of media," and the digital revolution model, "which assumed old media would be displaced by new media" (2011, para. 7). He indicated both aspects of convergence helped to shape the decisions of media policy makers and media consumers alike.

Rather than supplant old media, Jenkins (2004) noted, the digitization of information diversifies the distribution process, allowing media organizations and their audiences to share and repurpose content. The resulting "proliferation of channels" and "portability of new computing and telecommunications technologies" lead to "an era where media will be everywhere and we will use all kinds of media in relation to each other" (p. 34). Media companies are able to "accelerate the flow of media content across delivery channels [so] content that succeeds in one sector can expand its market reach across other platforms" (p. 37). Consumers, in the same way, "use these different media technologies to bring the flow of media more fully under their control and to interact with other users" (p. 37).

From a business perspective, convergence has many advantages, such as cross-

promotional opportunities; cross-media content sharing; budget, equipment, and staff savings; multiple media ad sales; and expanded audience. Journalism educator and media critic Marc Edge (2011) pointed to the merger of media giants AOL and Time Warner in 2000, a time when convergence was a buzzword in media circles, as partly a result of the high expectations media conglomerates had for convergence. However, expectations do not always align with reality. The AOL/Time Warner merger, identified by sociology professor Vincent Mosco (2004) as the merger "that propelled the convergence mania," resulted in AOL losing 80% of its value in the first three years; other Internet-related media suffered similar fates (p. 5).

The transition of newspaper organizations from paper only publications to paper and online publications, or online only publications, has not been smooth. Problems caused by the bursting of the dot-com bubble and the downturn in the economy beginning in 2001 led many to question the legitimacy, influence, and value of convergence, and to examine its threat to editorial diversity and job security (Huang, et al., 2006). According to some researchers, "multiskilled journalism has usually been promoted by media companies to justify job cuts" (Domingo et al., 2007, p. 8).

In the first nine years of the 21st century the number of full time newspaper employees declined by 26% (Edmonds, Guskin, & Rosenstiel, 2011). A 2013 Pew Research Center study showed that shrinking revenue and dwindling audiences led to staff and coverage reductions, and although most news consumers were unaware of the reasons for the cutbacks, nearly a third stopped reading, watching, or listening because of it (Edna & Mitchell, 2013).

Despite plummeting circulation, advertising revenue, and stock values—and

perhaps because of it—newspaper publishers continued to move forward with convergence, believing that the Internet would provide them with opportunities to cut costs and increase both audience and revenue (Quinn, 2004, Reinardy, 2011).

Quinn, however, cited comments by Ari Valjakka, editor-in-chief of Finland capital region's leading newspaper, that convergence could trivialize quality journalism "when the same journalist 'shovels' the same story from one medium to another without producing content appropriate for the medium" (2004, p. 120). Quinn saw potential conflict between the business view of convergence as a tool for increasing productivity and marketing, and journalists' views of convergence as an opportunity to do better journalism using better tools. Better journalism, he noted, usually costs money, but "the key issue here appears to be the editorial and social values of the news managers" (p. 120). The resolution of the conflict, he concluded, could have profound consequences for the practice of journalism.

How newspaper organizations frame their values affects both how their employees respond to their roles and how journalism is produced and presented. Journalism values sometimes conflict with business values, but over the last half of the 20th century both sides have managed to keep a laissez-faire attitude. An "invisible wall" between the business side of newspapers and the news side enabled local news editors to make decisions largely independent of pressures from advertisers, stockholders, and corporate executives (Basen, 2012). However, those walls may be crumbling.

Advertising purposefully seeks attention. Marketing professors Avi Goldfarb and Catherine Tucker (2010) found that increasing online advertising's "intrusiveness" increases a reader's purchase intent. Jakob Nielsen of user interface research site Nielson

Norman Group found that the more an ad looks like a component of original content the more users will look at it. He suggested that, "to maximize fixations, that's exactly what [advertisers] should do in a Web ad." Although he noted, "the distinction between editorial content and paid advertisements should always be clear," he also indicated that the distinction is not always made (2007, para. 17, 18).

Journalism professors Susan M. Keith and Leslie-Jean Thornton's (2011) research suggested that some newspaper organizations view the primary purpose of their websites as marketing and promotion tools rather than news sites. Even newspapers with strong editorial influence over online content and display, such as *The New York Times*, sometimes found it difficult to compete with the forces of advertising and marketing. According to Byron Calame former *Times* reader representative, the sharp decline in newspaper earnings and the search for additional revenue in the early 2000s sent the *Time's* advertising staff "scrambling" to find "attractive new options" for advertisers (2005, para. 2). His concern was that "pressures to let advertisers tie their pitches more closely to the credibility of the news columns," could "blur the distinction between advertising and articles—risking erosion of the readers' right to assume that the news columns are pure journalism, both in print and online" (para. 2). Although Calame admitted, "the sky isn't falling," he noticed "a few worrisome indications" that advertisers are slipping "over the line" (para. 5).

Former *New York Times* Senior Vice President Martin A. Nisenholtz, who helped establish the company's website, said "the end result of a website that is single mindedly obsessed with driving clicks in order to get more advertising revenue is a narrowing of content to appeal to the lowest common denominator" (Defren, 2012, n.p.). A 2014 in-

house innovation report by *The New York Times'* "new ideas task force" headed by Senior Editor for Strategy Arthur Gregg Sulzberger, son of *Times* publisher Arthur Sulzberger Jr., stated that the first step in improving the relationship between the news and business departments "should be a deliberate push to abandon our current metaphors of choice—'The Wall' and 'Church and State'—which project an enduring need for division. Increased collaboration, done right, does not present any threat to our values of journalistic independence" (*The New York Times,* 2014, p. 61).

Reader engagement brings advertising; advertising brings revenue. Quinn noted that while "journalism needs advertising and advertising needs journalism," problems occur "when the equation becomes unbalanced" (2004, p. 109).

The 2006 Pew Research Center study pessimistically concluded, "At many old-media companies, though not all, the decades-long battle at the top between idealists and accountants is now over. The idealists have lost" (2006a, para 4). The Pew study also found that readers "increasingly believe that news organizations act out of their own economic self-interest" rather than reader interest (2006b, para. 4), echoing the concerns of Nisenholtz and Calame.

According to journalist and media communications lecturer Ira Basen, the concern is "not that advertisers will take over the editorial process...The concern is that readers will think that advertisers have taken over. And if that happens, it's bad for readers, bad for journalists, and ultimately, bad for democracy" (2012, para. 8).

Although *The New York Times* may not be obsessed with driving clicks, it does use advertising techniques common to online news sites. The November 15, 2012 home page lead story about the Israeli/Palestinian conflict (Figure 1), for example, took readers

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to the story page, which included a lead news photo of Israeli soldiers near the border with Gaza (Kershner, Rudoren, & Cowell, 2012). One purpose of a lead photo in a news story is to support or complement the story's message, in this instance the potential dangers inherent in the escalating conflict. However, immediately to the right of the Israeli/Palestinian conflict photo was a 15-second auto-play video ad previewing the Steven Spielberg movie, *Lincoln*, an obvious visual and cognitive distraction from the content and intended message of both the news photo and news story.

In addition, the banner ad positioned directly above the story's main headline and photograph changed over time and at one point included an ad for Israeli bonds (Figure 1). While such positioning does not necessarily indicate bias, the juxtaposition of an ad for Israeli bonds positioned above a news story directly related to an Israeli military operation could lead some to conclude that bias was present.

Linguistics professor John Knox (2007) indicated, "as news becomes increasingly commoditized, and is increasingly blended with entertainment, the textual products of news must compete in what Gauntlett (2000) calls 'the attention economy'" (p. 28).

Media professors John Nerone and Kevin Barnhurst observed, "To read a single news article generally requires several clicks or scrolls through the promotional maze, with each few paragraphs of text involving yet another exposure to ads. ...The promotional mission [of the Web] clearly dominates or makes its presence insistently known" (2001, p. 471).

Processing advertising content is a complex mental process that requires "a sequence of sophisticated cognitive steps" from the reader (Scott, 1994, p. 265). It seems unlikely that multiple media narratives can communicate their message as effectively

when they must compete for readers' attention with online advertising designed to be intrusive. Such distractions can interrupt narrative coherence, making it possible for readers to overlook aspects of a story's meaning.

Multiple media, multiple skills. Organizational factors also have influenced the production and use of multimedia online. Increasingly in news organizations, formerly specialized tasks (photography, video and audio recording, television commentary, posting stories and photo galleries to the Web) have become a shared responsibility of newsroom journalists who may or may not have the skills or training required for the tasks. In addition to these responsibilities, reporters and photographers often contribute to online news blogs (sometimes voluntarily, sometimes not) to take advantage of the interactive nature of the Internet and engage the audience. The pressure to do more with less may affect both the quantity and quality of newspaper journalists' work, including multimedia narratives that take more time to complete, require more space to display, and divert more resources toward multitasking.

The effects of media convergence may have led to more outside control over decisions formerly made by newsroom managers and journalists. A study by journalism professor Sue Robinson concluded there have been indications of "a breakdown in the entrenched hierarchy of newsroom decision making" (2010, p. 136), where outside managers have been able to act as "a boss in all but title and formal job description." She noted an instance where a technical director was able to develop, organize, and implement policy on a readers' blog, despite concerns from newsroom journalists, simply because he had the technical expertise to make it happen. She said this reflects back on the organizations' view of its own staff and demonstrates "a shifting understanding of

what (and who) is powerful in this new [online] environment" (p. 136).

Keith and Thornton found that although the majority of newspapers' websites were produced and managed by newsroom journalists, authority over the websites' appearance was the responsibility of newsroom journalists only in slightly more than a third of the newspapers surveyed. They concluded, "Who holds ultimate authority over Web operations...has not always been clear" (2011, pp. 127, 129), and suggested the reason the appearance of newspaper websites is outside control of newsroom managers may be that "Most newspaper journalists lack the technical skills to design professional-quality websites, capable of handling enormous amounts of constantly updated information, and integrate them with content management systems" (p. 132).

The divide between journalists and their news organizations in some instances led to a distrust of the actions of the news managers. Journalism professor David Ryfe in his study of changes in newsroom structure cited journalists who concluded convergence led to situations where "editors began to manage reporters and business types began to micromanage editors," which demonstrated "little regard for 'good' journalism" (2009, p. 667).

Media professor Natalie Fenton's research on the news media supported claims that they are in crisis:

> Our research reveals journalists being thrust into news production more
> akin to creative cannibalization than the craft of journalism–there may be
> fewer of them but they need to fill more space and to work at greater
> speed while also having improved access to stories and sources online.
> Consequently, they talk less to their sources and find themselves captured

in desk-bound, cut-and-paste administrative journalism. (2011, p. 64)

In addressing the additional work sometimes required of multiplatform journalists Quinn indicated that, "in terms of the quality of final product, it is not possible for one person to cover a major story adequately for all media" (2005, p. 31). Journalism professor Peter Martyn wondered if today's multimedia journalism is any better than that "produced decades ago by reporters and editors pounding on typewriters" (2009, p. 201). Some journalists suggested multitasking might be responsible for the decline of both the quality and the quantity of journalism (Russial, 2009). Media professor Ivar John Erdal concluded that the derisive terms for convergence journalists he encountered in his research—Inspector Gadgets; jack-of-all-trades, master of none; backpack journalists— indicates many believe "the multi-skilled journalist is not really very good at anything" (2011, p. 217).

Criticism of unwanted changes brought about by newsroom technology and its effect on journalists is not a new phenomenon. William Grosvenor Bleyer, director of the University of Wisconsin School of Journalism, writing in 1927 about technological change in the newsroom, concluded that "mechanical devices in due time changed the whole character of the American newspaper. By telephoning the bare facts of the news to rewrite men in the newspaper office, reporters and correspondents tended to become news gatherers rather than news writers" (Blyer, 1927, p. 397).

Then, as now, technological change holds promise as well as peril for journalism newsrooms. American Journalism Review senior contributing writer Charles Layton (2008) noted that multimedia digital skills are an essential ingredient in the success of online news media. Recent software developments such as Final Cut Pro and Soundslides

have enabled news photographers to expand their storytelling capabilities by producing

narratives using video, still photography, and audio, more quickly and more

professionally than they could previously. The belief by some news organizations that

online video could capture TV advertising revenue (Thurman & Lupton, 2008) helped

transform news photographers' roles from still to multimedia photographers (Layton,

2008). Videographer and multimedia journalism lecturer David Campbell, who analyzes

visual storytelling, indicated:

> There is a general sense amongst photojournalists that multimedia formats
>
> are becoming increasingly important. ...[W]hile not a replacement for
>
> other approaches, presenting a story through a combination of images,
>
> sound, and text offers a number of advantages. Stories can be provided
>
> with a greater context, their subjects given a voice, and they can be easily
>
> distributed through new digital channels (the web, apps) that are no longer
>
> constrained by the limited space of print publications. (Campbell, 2013, p.
>
> 3)

The dramatic increase in video production online in the first decade of the 21st

century coincided with an increased interest in the consumption of video by consumers.

Video site YouTube, now a subsidiary of Google Inc., posted its first video in 2005. By

2010 it was attracting an audience almost twice as large as the prime-time audience of all

three major U.S. TV networks (Chapman, 2010). According to online video research site

REELSEO Online Video Marketing Guide, 144.1 million viewers watched 14.6 billion

videos on YouTube in 2010, or 101.2 videos per viewer (Rick, 2010).

Layton cited a 2008 *Washington Post* story by reporter Gene Weingarten as an

early example of the increasing relevance of online video for new organizations. Weingarten persuaded concert violinist Joshua Bell to perform anonymously as a street performer in the Washington D.C. Metro station to see how people reacted to his playing. The newspaper story was accompanied by photographs and reported how context matters in shaping a response to content. However, in the online version the newspaper embedded small video clips with the story to enable readers to see and hear Bell's performance and observe the reactions of commuters. The online version went viral, generating emails from as far away as Beijing. Reporter Weingarten concluded the online multimedia story was more effective than the print story. "I'm not sure it happens all the time," he said, "but it happens more and more now as we figure out how to use video as an adjunct to a story" (Layton, 2008, p. 26).

As news organizations explore new ways to combine multiple media formats to reach readers online, it is not certain that long-form narrative journalism demands a jack-of-all-trades approach. The amount of time, expense, training, and additional work required to teach journalists to perform multiple complicated, technical tasks, particularly in a converging industry that places value on originality and creativity, seems to argue against that approach. On the other hand, cooperation and collaboration between journalists with different skill sets seems to be an essential requirement in the production of long-form multimedia narrative.

Alexandre Coronato Rodrigues and Roselita Lopes de Almedia Freitas suggested that the collaborative relationships between individuals working together in film or video production drive the construction of a "collective narrative." The back and forth communication required creates a semiotic relationship through the exchange of ideas.

They considered these collaborations...

> A collective authorship...[in which] the end result is the sum of the
> intentions of each collector agent, modified and influenced by the outcome
> that is seen and commented on by the people who are building a movie in
> real time...The decision on a scene to be captured is influenced by the
> narrative that has been constructed in the previous scenes, and the ideas
> generated by the debate with the other agents. It's a system being modified
> through the analysis of the results. (2014, p. 120)

The production of long-form multiple media narratives in today's online
environment increasingly requires journalism *and* technical skills. Although traditional
narrative principles remain relevant for multidimensional storytelling (Ryan, 2004; Lynch
& Horton, 2008; Cohn, 2013a; Apfelbaum & Cezzar, 2014), a collaborative approach in
which multiple media narratives are modified through an analysis of the intentions of all
the journalists who produce them—a "collective authorship"—may be a necessary
development of the digitalization and convergence of multimedia journalism.

Narrative form online. Clearly, something is happening to storytelling online.
Online multimedia forms (photography, video, audio, and interactive graphics) are often
used to complement traditional story structures or as an adjunct to the main text rather
than an integral part of it (Rue, 2013). However, that is changing. As in the past,
technology is affecting the ways in which stories are created and presented. New
narratives are evolving, joining multiple media forms in structural relationships unlike
those that have come before. News organizations are experimenting their way toward a
new narrative form, blending words, pictures, video, graphics, and audio to tell stories in

ways not yet fully understood.

"What's happening," according to "transmedia" author and *Wired* magazine correspondent Frank Rose, is "A new grammar of storytelling is emerging, a grammar of storytelling that's native to the Internet and to the networked world it's creating" (2011, n.p.). An issue for Rose and for those creating and consuming these new narratives is that "people are still trying to figure out the rules" (2011, n.p.), a contention that supports McLuhan's statement that new technologies take time before they are properly understood (McLuhan, 1962).

Punday considered the online environment in which we encounter both narrative and non-narrative texts "first and foremost a multimedia space," and "the rhetorical work that goes into defining the relation between those media...shape the way that such texts can tell a story" (2011, p. 32).

Print media include both written and visual communication. Radio is entirely an aural medium. Film includes aural, visual, and sometimes written communication but, nevertheless, is mostly a visual medium. The Internet however is different.

Media scholar Marie-Laure Ryan (2003) asserted that the medium used to tell a story in part determines how a narrative is shaped, which in turn affects aspects of how narrative meaning is conveyed. Technology and literature professor Joseph Tabbi concluded, "The weight of the technical device on our thoughts has to be taken into account no less than traditional questions of meaning, narration, authorial intention, and readerly interpretation" (2010, p. 3).

Throughout history multiple mediums have been used to relate the same story. [T]he dissemination of Greek myth through various artistic media—

sculpture, architecture, drama, epic,—or, closer to us, the multiple modes

of distribution of Biblical stories in the Middle Ages...were not only

written in books, which most people could not read, they were also retold

orally during sermons, enacted in passion plays, illustrated through

painting and stained-glass windows, and they even inspired the interactive

phenomenon of the Stations of the Cross, where pilgrims relived the

passion of Christ by following a fixed itinerary dotted with little chapels.

(Ryan, 2013, para. 2)

Jenkins related: "For most of human history, it would be taken for granted that a great story would take many different forms, enshrined in stain glass windows or tapestries, told through printed words or sung by bards and poets, or enacted by traveling performers" (2003, p. 3). Today this process continues on the Web with forms such as audio, video, photography, and motion graphics that often involve some type of interactivity.

Stories told through different mediums mean differently. McLuhan noted, "The alphabet was one thing when applied to clay or stone, and quite another when set down on light papyrus" (McLuhan & Zingrone, 1995, p. 279). Friedrich Nietzsche, after purchasing a typewriter in 1882, concluded, "our writing equipment takes part in the forming of our thoughts (cited in Carr, 2008, para. 12,14). Linguist Ruth Page and media researcher Bronwen Thomas emphasized that the use of computers, mobile phones, game consoles, and other devices "is a sharp break from the more implicitly remediated nature of film and writing, because such multimedia devices make the relation between media a fundamental part of our interaction with the work" (2011, p. 26). Rose concluded that

electronic media "change the way we read and the way we think" (2012, p. 112).

The determinant nature of a medium, however, does not mean the medium is more important than the message. It means the medium changes the message, which according to Mark Federman, former chief strategist of the McLuhan Program in Culture and Technology, is what Marshall McLuhan's statement "the medium is the message" was intended to communicate (2004, p. 1). For McLuhan, "the medium determines the modes of perception and the matrix of assumptions" the reader brings to the message and "shapes and controls the scale and form of human association and action" (McLuhan & Zingrone, 1995, pp. 188, 152).

A reader cannot separate how things signify meaning from the language or the media (the sign systems) in which they are experienced (Chander, 2007, p. xv). How a text signifies meaning online then necessarily differs from how it signifies meaning in print, which, as Ryan observed, "raises the question: can narrative be radically different from what it was in previous ages and still be called narrative" (2004, p. 331).

The traditional linear narratives of classical tragedy, as discussed in Aristotle's *Poetics*, have a beginning, middle, and end structural pattern.

> For Aristotle, a narrative is constituted by establishing a meaningful, cohesive, probable, and possibly even necessary order out of dissonant, fragmented, merely episodic, accidental or contingent elements (Halliwell, 1987; Ricceur, [1983/85] 1984/88). Thus, any sequence of actions and happenings which is discernible as a unit and has a temporal organization as well as being perceived as meaningful can be called a narrative.
> (Meuter, 2014, p. 448)

Non-linear narratives have a beginning, middle, and end as well, but as French filmmaker Jean-Luc Godard famously remarked about cinematic narrative "not necessarily in that order" (Sterritt, 1999 p. 20). Non-linear narratives can start at any position—beginning, middle, or end—and move back and forth along a timeline. Nevertheless, since at least the time of Aristotle readers of written narratives have accepted the structure presented to them by a text's originator, or "sign-maker," and coherent linear and non-linear narratives have generally maintained an orderly, logically, and aesthetically consistent relationship of their parts.

If a narrative's presentation sequence or event sequence is changed, however, the narrative itself is changed to the point that it becomes a different narrative (Grabes, 2013, n.p.). When contemporary readers of multiple media narratives online choose the sequential order of narrative elements they change the traditional relationship between author and reader, becoming in effect co-authors. Such choices, depending on how the elements are structured, alter the orderly relationship of the narrative elements and affect overall meaning.

Linguist John Corner concluded that "even where the most uncomplicated and familiar of routine significations are concerned" the interpretation of meaning is "inherently unstable" (1991, p. 274). How much more unstable is the meaning derived from new media narratives that are constructed in complicated and unfamiliar ways in an interactive environment, particularly those partially constructed by readers?

Different mediums do not automatically lead to different meanings. The content of a written text in print and the same text online remains fundamentally the same. Researchers Richard Howells and Joaquim Negreiros emphasized that new media are

simply "'new delivery systems'…not new forms of communication, but increasingly convenient and consumer-friendly hardware systems, which deliver similar texts without altering their content, meaning or 'message'" (2012, p. 264). They argued that the grammar of a particular film, for example, remains the same whether the film is shown on a movie screen or on television. Nevertheless, they admitted that the manner in which a message is received does alter the viewing experience and "to an extent influence its meaning" (p. 268-269).

Obviously, video, photography, writing, audio, and graphics are not "new" forms of 21st century communication. However, combining multiple narrative forms online affects the narrative experience and influences content and meaning in the same way forming a bible story into a passion play, combining a sequence of still pictures into a motion picture, or combining sound with moving pictures affects the content and the meaning of those mediums. In discussing the structure of music videos even Howells and Negreiros admitted that sometimes readers conclude that a music video's images surpass its musical content and create "new meanings" through "the confluence and juxtaposition of images" (2012, p. 281).

Clearly, combining mediums changes the "universe of discourse," meaning the totality of codified language or shared frames of reference upon which the narrative model is based. Similar to passion plays and music videos, multiple media narratives are able to create new meaning through a "confluence and juxtaposition" of narrative forms.

Although a system of signification requires acceptance of a system's codes, meaning does not reside solely within the medium itself. How a message is processed also depends upon a number of variables that influence message acceptance and

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understanding, including the reader's concentration and technical skills. "The ability [of readers] to follow the flow of stories and information across multiple modalities," is an essential skill for bridging today's "digital divide" (Jenkins, et al. 2009, p. 4).

Leckner observed, "The user should be so absorbed by the interface, content and design that the medium itself does not matter. For both paper and screen media, reading should be effortless" (2012, p. 163). Carr, however, pessimistically declared, "When the Net absorbs a medium…it surrounds the content with the content of all the other media it has absorbed," and the result is "to scatter our attention and diffuse our concentration" (2008, para. 20).

In traditional print narrative structure, which continues to be applied to multiple media narratives, authors organize narrative chronology and arrange events to show causality and readers mostly follow the imposed order (Madej, 2008). From a traditional perspective of reading a text, going from the written story to a video, to a graphic, to a photograph seems a significant interruption of narrative coherence.

Howells and Negreiros, however, indicated that traditional narrative structure is frequently 'fractured,' lacking both linear and temporal development (2012, p. 281). Photographs, maps, illustrations, textual elements, color backgrounds, advertising and other communication forms used in print have always been able to complicate the linear and temporal development of the overall narrative text. One could argue readers skip around, move back and forth within the text, read captions, and look at photographs accompanying stories when reading a story in a printed publication. Even news stories often move backwards and forwards in time in violation of temporal order.

Although traditional narrative does not allow direct input or interaction from

message "receivers" who might interfere with or alter the message (Croteau, Hoynes, & Milan, 2012, p. 288), the narrative forms made possible by present day digital technology permit a plurality of both structure and interpretation.

The ability of readers to engage with different narrative forms can be both quantitatively and qualitatively different and arguably more disruptive to the overall narrative reading experience online than in print. Presenting narratives in multiple media formats that permit different chronologies, arrangements, and interpretations, potentially discounts the meaning intended by the author (Ryan, 2003). Linguist and cognitive scientist Neil Cohn related several experiments that support story grammar's beginning, middle, and end approach to narrative:

> Stories following the canonical story grammar episode structure were
> remembered with better accuracy than those with changes in temporal
> order (Mandler & Johnson, 1977), or inversion of sentence order (Mandler,
> 1984). Recall also worsened in correlation with the degree to which a
> story rearranged the order of events (Stein & Nezworski, 1978): The
> further a structure departed from the canonical order, the harder it was to
> comprehend. (2013a, p. 444)

When readers participate in the construction of narrative by choosing the order in which multiple media narrative elements are read, the sender and the receiver may not agree on how and what the signifiers signify. Traditional media is a "one-way" form of communication—transmitter to receiver. In new media, which includes presentations such as *Snow Fall*, the sign-maker (the creator or "maker") is not necessarily the one who establishes the primary relationship between the signifier (the form which the sign takes)

and the signified (the object to which the sign refers). Increasingly this role belongs to the "receivers" of the information—the "interpretant" in Charles Peirce's definition, meaning not an interpreter, per se, but "the sense made of the sign" (Chandler, 1995b, para. 34).

Should it matter, really, if the online reader accesses the text, then switches to a video of one of the subjects mentioned in the text, then switches to a picture gallery, then to a map, and then back to the narrative? From a chronological and linear narrative perspective it does. From the perspective of individual narrative comprehension it might—the depth of the readers' distraction in print cannot compete with the distractive qualities of online, multimedia presentations, particularly those that include a number of elements that require significant cognitive attention and reader interaction.

Jenkins et al. hold a different view—that online multitasking is not the same as distraction but "a method of monitoring and responding to the sea of information around us" (2009, p. 63). They defined multitasking as "scanning for relevant shifts in the information while simultaneously taking in multiple stimuli" (p. 61). Instead of thinking of attention and multitasking as oppositional, they proposed thinking of them as complementary, "both strategically employed by the brain to intelligently manage constraints on short-term memory," which they admitted is "sharply limited" (p. 61).

From this perspective both audiences and journalists can develop an ability to interpret these new narratives, becoming aware of how the structure of combined mediums affects narrative meaning and how online technical skills influence that process. The question remains, however, are we there yet?

Cognitive psychologist Jerome Bruner stated, "We live most of our lives in a world constructed according to the rules and devices of narrative" (1996, p. 149). "The

central concern," Bruner stated, "is not how narrative as text is constructed but rather how it operates as an instrument of mind in the construction of reality" (1991, p. 6). In this sense, narrative is not simply an after the fact representation of reality but an ongoing construction of social realities that, as Jenkins indicated, requires the reader's active participation. Bruner concluded, "The telling of a story and its comprehension as a story depend on the human capacity to process knowledge in [an] interpretive way" (1991, p. 8).

Although readers' minds are capable of concentrating closely on the content of most messages, they also may choose to attend merely to its superficial aspects (Todorov, Chaiken & Henderson, 2002). Communication researchers Allen Bell and Peter Garrett determined that even "simple-looking" news stories are more complex than they first appear and are "often replete with ambiguity, unclarity, discrepancy and cavity" (1998, pp. 65-66). They concluded, "We can only hope to have a clear understanding of the nature of news content by close analysis of the news text" (p. 65). If true of simple-looking texts, how much effort is needed from readers to understand the meaning inherent in more complicated multiple media narrative structures?

Manovich believed "new media spaces are always spaces of navigation" (2002, p. 253). But it is not yet evident that most readers possess the skills needed to navigate new narratives, especially those challenged by intrusive advertising and complex structures that interfere with the relationship between the reader and the "text." The relationships between combined multimedia narratives can complicate overall narrative structures, lead to confusion, and require more effort than readers are willing to make. Online readers

simply may not be willing or able to take on the role of an active participant in the ongoing construction of narrative meaning.

Slater concluded, "Research—as well as personal experience—suggests that people are 'cognitive misers' (Stroh, 1995). That is, people do not tend to exert more mental effort than is necessary to achieve a task" (2002, p. 176).

Communications professor Ronald Rice observed:

Now individuals must make more choices, must have more prior knowledge, and must put forth more effort to integrate and make sense of the communication. Interactivity and choice are not universal benefits; many people do not have the energy, desire, need or training to engage in such processes. (1999, p. 29)

More choice does not necessarily lead to better choices. Iyengar and Lepper demonstrated "When people have 'too many' options to consider, they simply strive to end the choice-making ordeal by finding a choice that is merely satisfactory, rather than optimal" because more options demand "more effort than seems justified" (2000, p. 999), a view that supports Stroh and Slater's point that people tend to be cognitive misers where mental effort is concerned. Santana, Livingstone, and Cho discovered that most readers prefer reading stories over blogs or photo galleries that require a greater degree of interactivity because they "are not inclined to engage multimedia tools on news websites" (2011, p. 24-25). Ryan concluded, "Narrative coherence is impossible to maintain in a truly complex system of links. We need therefore simpler structures, structures with fewer branches and fewer decision points" (2001, n.p.).

Former *New York Times* multimedia editor Andrew DeVigal concluded

"Some narratives should remain linear and simple ... others can be enhanced by layers presented in interactive forms" (2011, para. 12). The interplay of multimedia story elements in interactive narratives, he determined, act as "non-linear layers" to enhance the overall narrative (para. 7).

To explain the interplay of multimedia story elements DeVigal used a graphic diagram depicting a horizontal line with arrows pointing left to right to indicate narrative progression. He considered the line the main text narrative, organizing structure, or story "backbone" with a beginning, middle, and end (2001, para. 12). Touching both sides of the horizontal line were four differently sized circles (two on each side) representing additional story forms: graphics, photos, video, and other media. He labeled these forms "sidebars," and considered them tangential to the main storyline with "in-and-out points" that allowed readers to explore different elements of the story by choosing a sidebar—a concept similar to Barthes' "satellites" that can be eliminated but diminish the narrative aesthetically. The structure of the diagram changes depending upon the story elements and the forms available (para. 14). DeVigal considered the sidebars to be "less about the story form and presentation/design and more about the experience and narrative flow" (para. 16). Readers can engage in a sidebar but they come back (circle) to the main narrative and continue on the narrative path.

DeVigal listed *Punched Out*, a story about professional hockey "enforcer" Derek Boogaard, among several interactive narratives he worked on for *The New York Times*. Although he was proud of those efforts he also admitted, "we're not quite there yet. I'm looking forward to the day when both the narrative and these

interactive 'sidebars' work explicitly together and each are edited and designed as integrated and interactive components of the narrative" (2001, para. 17).

The lack of integration in digital media that DeVigal noted in part reflects the issue Ryan had with interactivity, it is exploratory and therefore "de-emphasizes the narrative," which affects how narrative "emerges in the mind" (2004, pp. 8-9).

Although interactive hypertext may not always have serious consequences for narrative coherence, it does permit readers to alter the temporal and spatial aspects of a story, which could interrupt the narrative structure to such an extent that it overwhelms the author's intent and the story's meaning.

Psychologist Donald Norman reasoned that hypertext made it more difficult for an author to organize a narrative in linear order.

It is hard work to organize material, but that effort on the part of the writer

is essential for the ease of the reader. Take away the need for discipline

and I fear that you pass the burden on to the reader, who may not be able

to cope, and may not care to. The advent of hypertext is apt to make

writing much more difficult, not easier. (Norman 1988, p. 213)

For Ryan the more opportunities available to readers to select a narrative path across multiple media "textual" space, the more difficult it will be for the author to determine the reader's path, resulting in randomness (2004, p. 8). Ryan asserted that randomness "is incompatible with the logical structure of narrative" (p. 8) and is "the deathbed of narrative coherence" (p. 11).

As Lynch and Horton noted, "The primary design strategy in thoughtful hypertext is to use links to reinforce your message, not to distract users or send them off chasing a

minor footnote in some other website" (2008, pp. 244, 245). Altering a narrative's sequential relationship potentially influences its meaning and the coherent arrangement of its narrative elements. Linking content to other content through hypertext potentially offers significant levels of multiple meanings. The interactive nature of hypertext linking changes narrative structure, that is, it alters "how narrative structures…come to the reader, how they are experienced in their dynamic unfolding" (Ryan, 2001, para. 6).

"Since it would be impossible for the author to foresee a coherent narrative development for each path of navigation, the order of discovery of the lexia [Barthes term for blocks of text] cannot be regarded as constitutive of narrative sequence" (Ryan, 2004, p. 11). Although a narrative is not simply one thing following another, Ryan stated that it does require a sequential relationship in which "temporal order is meaningful...It is simply not possible to construct a coherent story out of every permutation of a set of textual fragments" (pp. 2, 4).

Hypertext could be viewed as sequential, however. Communications professor and hypertext fiction author Jane Yellowlees Douglas asked if language is by definition sequential how could hypertext language be nonsequential? The issue, she said, is the understanding of sequence as a fixed order, "which is slightly misleading, since both hypertext fiction and digital narratives enable readers to experience their contents in a variety of sequences...The process of reading interactive narratives themselves," she contended, is "discontinuous, nonlinear, and often associative—but hardly nonsequential" (2001, pp. 37, 38).

Although the process of reading interactive narratives is sequential in the strict meaning of the word—one thing after another—sequential order is not always logical. As

previously indicated, logical sequential order is a requirement of coherent narrative. Manovich concluded, "the user experience of such computerized collections [of new media objects such as hypertext] is...quite distinct from reading a narrative or watching a film" (1999, para. 3). Hyperlinks can take a story in a different direction than the one intended by the author, which can compromise narrative coherence (Mulholland & Collins, 2002). In a "truly complex system" of hyperlinks, Ryan noted, narrative coherence is impossible because linking rearranges the elements of narrative representations, which "must be thematically unified and logically coherent" (2004, p. 11).

Interactive constructions that lack logic, causality, and sequence, Ryan concluded, are the equivalent of "a jig-saw puzzle," which deemphasizes the narrative over the construction process (2004, p. 9). Like a jigsaw puzzle, some pieces "fit easily together, and some others do not because of their intrinsic shape, or narrative content" (p. 4). An arbitrary sequence of database records is not a narrative. It requires "a series of connected events" (Manovich, 1999 para. 19).

New York School of Design instructor and author Karen McGrane maintained, "the medium and the message are intertwined so tightly they can't easily split apart" (2013, para. 3). What then are the implications for the online readers of multiple media narratives who lack the skills, energy, desire, or need to make sense of fragmented or non-sequential narrative structures? If the syntax or structure of texts, images, and other multiple media content are integral to story coherence and the construction of social reality, what happens to meaning when narrative structural hierarchies break down for the reader?

Visual narrative. Paul Cobley in tracing the history of narrative distinguished between two types: those that involve a "telling" of events and those that involve a "showing" of events. Although "telling" is most closely associated with written narrative and "showing" with visual narrative, narratives of any type maintain a "fragile distinction between 'showing' and 'telling' " and can switch from one point of view to another (2001, p. 6).

The difference between showing and telling is a matter of presentation: Showing is a direct depiction of an event; telling is an indirect conveying of an event (Rabinowitz, 2008). This distinction developed in the late 19th and early 20th centuries as "a modern recasting" of Plato's opposition between what he called "mimesis" (imitation) and "diegesis" (narration) (p. 530). Telling requires less complicated judgment from readers than showing (p. 530) because it demands less interpretation. Just as writing contains elements of mimesis or "showing," photography contains elements of diegesis or "telling" Images, like words, have syntax.

The Oxford English Dictionary (online) defines narrative as a connected sequence of written or spoken words or pictures ("Narrative," Oxford English Dictionary), implying that pictures must be sequential in order to be considered narrative and that a single photograph is not capable of forming a narrative. Although they are not "stories" or "narratives" in the same sense as a combination of images or words, single photographs can possess the same power to "tell" a story. Joe Rosenthal's photograph of a flag being raised by soldiers over Mount Suribachi tells a story to contemporary American audiences as readily as Leonardo Da Vinci's painting of *The Last Supper* told a story to 15th century audiences. In both instances the interpretation of meaning within the

image is grounded in the individual's social and cultural experience.

For some literary and social critics, a common criticism of photography is that its specific representational nature limits the imagination (Sontag, 1977). There are circumstances, however, when showing matters more than telling. Poet Elizabeth Barrett Browning, in describing the representational power of photography, wrote,

> I long to have such a [photographic] memorial of every being dear to me in the world. It is not merely the likeness which is precious in such cases but the association and the sense of nearness involved in the thing...I would rather have such a memorial of one I dearly loved, than the noblest artist's work ever produced. (Browning, 1843/1954, n.p.)

Author Susan Sontag (1997) in her book, *On Photography*, agreed. "Our irrepressible feeling that the photographic process is something magical," Sontag wrote, "has a genuine basis. No one takes an easel painting to be in any sense co-substantial with its subject; it only represents or refers. But a photograph is not only like its subject, a homage to the subject. It is part of, an extension of that subject" (p. 155).

Barthes declared, "The photograph is literally an emanation of the referent" (1982, p. 80), or what Browning described as "the association and the sense of nearness involved in the thing." This association between the image and the thing it represents "repeats what could never be repeated existentially" (p. 4). Photography's specificity is its strength—it helps define the imagination by giving form to concepts, that is, it makes them real.

The very foundation of written language originated with pictures, drawings on cave walls (i.e. pictographs) by pre-historic humans in which the characters are pictorial

in appearance and represent a specific idea (Grove, 1993). The hieroglyphic writing of ancient Egypt is pictographic, as are some aspects of modern Chinese writing. The signs used at the Olympic games to help direct people to different events and locations are pictographic. The signs on our highways indicating a curve or a hill or a slippery road are pictographs.

Pictographs function as single images, but when combined they also can tell a story. What enables pictographs to produce a narrative is the logical relationship of the elements of the system—the arrangement of the individual pictographic representations—with each other (Drucker & McGann, 2001). It is this same logical arrangement of individual images with one another that produces a photographic narrative.

Photographer Henri Cartier-Bresson (1952) coined the phrase "the decisive moment" to explain what distinguished a successful photograph. What made a photograph decisive was "the simultaneous recognition, in a fraction of a second, of the significance of an event." What made a photograph an expressive or meaningful moment was "the precise organization of forms which gives that event its proper expression" (p. 14).

These unique, stilled moments of time require two things: the event must be significant and the forms of the event must be precisely organized. As with pictographic narratives, the organization of form is critically important to the effectiveness of photographic narrative expression: Complicated or poorly organized photographs like complicated or poorly organized sentences can be difficult to "read." This is true not simply for the internal organization of a single image, but also for the organizational

gestalt of any combination of images joined to create a photographic narrative or picture story.

In their photojournalism and design textbook, *Visual Impact In Print*, professors Gerald D. Hurley and Angus McDougal distinguished between a picture story, a picture essay, and a picture group. A picture story has visual continuity and its form is essentially narrative. A picture essay attempts to prove a point or explore a problem and is basically interpretive. A picture group is a collection" of individual photographs on a single subject lacking both the picture story's continuity and the picture essay's point of view (1971, pp. 69-72).

Legendary photojournalist W. Eugene Smith used the term photo essay instead of picture story to define visual narrative reporting. Although the terms are sometimes used interchangeably, definitions can differ. "You can take a group of pictures all in the same place, on the same subject, and lay them out to make a powerful visual statement," Smith said, "but if they don't reinforce each other—if they don't show those interrelationships that make the whole more than the sum of its parts—you've got what I'd call a portfolio" (Moran, 1974, p. 15).

Caple and Knox considered "Central to Smith's understanding of the photo essay here is the fact that the images must relate not only to the subjects or happenings they depict, but must also relate to each other in a way that produces a coherent whole" (2012, pp. 213-214). Smith's portfolio has the same meaning as Hurley and McDougall's picture group—photographs that do not form a coherent relationship. Smith describes it as "a parking lot of pictures" (Moran, p. 14). The parking lot metaphor implies static communication where the photographs neither reinforce each other nor advance a

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narrative.

Caple and Knox provide a comprehensive definition of a picture story as "a rhetorically structured sequence of images that tell a story, and that are complemented by language but can stand alone from it, independent from any other text for their collective meaning or purpose" (2012, p. 231). Rhetorical structure distinguishes visual narrative from a simple grouping together of individual photographs. Rhetorical structure, meaning its visual form or syntax, is what joins individual photographs in a coherent whole to construct narrative. This same principle applies to film or video, which joins individual images and scenes into a coherent story. As with pictographs, the organization of visual "signs" corresponds to the structural organization of sentences in written narratives.

The use of still photography to create a visual narrative relies upon simplicity, clarity, organization, structure, and the power of the images to engage readers (Hurley & McDougall, 1971, pp. 69-72). These same visual principles apply to video. The arrangement of visual elements—their relationship with each other and with related components (e.g. text and audio)—is the syntax that gives visual narratives intelligible meaning. As with text, anything that can interfere with the ability of visual content to engage the reader can complicate its meaning.

Navigating the Web. The arrangement of multiple media narrative elements online in part determines how readers interact with them. "Most Web pages are collections of separate elements: texts, images, links to other pages or sites" (Mannovich, 1999, para. 5), and readers can explore areas of interest simply by choosing to navigate to the relevant areas. The fluid nature of online communication is a large part of its appeal. However, the process of navigation itself can be detrimental to comprehension.

Interacting with words and pictures online, for example, can get complicated. Some websites include captions with photographs; on others, captions must be selected. Some sites require the reader to select the "caption on" option; others require the reader to move the cursor over the bottom of the image to show the caption. On some sites captions are placed below the photographs; on others they are adjacent to the side of the image or within the image. On some sites photographic slide shows advance with clicks, on others, they advance automatically without reader input. Some sites require readers to scroll vertically from one image to another; others require horizontal scrolling or clicking through the selections. Some sites provide "thumbnail galleries" beneath the lead photo to aid in photo story navigation while others do not.

Robinson reported confusion on the part of readers when navigating online sites, with many feeling "overwhelmed" (2010, p. 161). Unlike newspapers where content is in the same general location from section to section, online sites "relocate" information throughout the news cycle making it difficult for readers to find what they want. The online sites in Robinson's study positioned stories in hard to find locations, labeled them differently and inconsistently, and moved them to other sections (p. 161).

Unlike newspapers, the lead photo with the lead story online may disappear when the reader returns to the page minutes later. When photographs change regularly on home pages, story pages, and in gallery thumbnails, the associations between them and the meanings they construct changes. When content changes, meaning changes. Online news stories and photo stories are likely to appear over multiple pages, to be located under different headings, and to be interrupted by ads (often including video), a process Santana et al. refer to as "the scattershot nature of the online news story" (2011, p. 23).

Lack of standardization also may contribute to reader confusion when processing news and information online. In their study on reader recall and engagement, researchers Santana et al. discovered that online news is "ephemeral" and "can appear and disappear without warning, thus creating an element of distraction, what DeFleur and Davenport called 'factors of contextual interference'" (2011, p. 23).

The ephemeral nature of online communication also applies to visual communication. Viewing visual narratives online isn't the same as viewing visual narratives in print. Viewing multiple images online is often a mechanical process that "is not coherent or functional" (Caple & Knox, 2012, p. 217). On a newspaper page photographs in narrative stories are positioned together spatially, which makes it easier for readers to make connections that form coherent relationships between images and text, thereby maintaining a narrative progression.

Susan M. Hagan, in "Visual-Verbal Collaboration in Print," argued, "visual/verbal messages develop when cohesive and perceptual relationships form between image and text" (2007, p. 49). She proclaimed that text and visual information collaborate "as interdependent contributors to meaning" (p. 83). Borrowing concepts from Arnheim's (1974) study on perception, she showed that "Similarities in location, size, and alignment help tie visual and verbal elements together" (p. 52).

The semiotic approach to visual communication sees images as a collection of signs, what Barthes calls a "chain of associations," that combine to form meaning. However, the sequential viewing of photographs online (i.e. positioned one *after* another rather than positioned spatially *in relation* to one another) makes it difficult for photo editors and designers to create these types of associations or spatial relationships in

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combination, which makes it difficult for readers to make the connections between photographs necessary for narrative coherence.

Lynne Cooke (2005) in her study of visual convergence discussed "scannable design," a blending of structural and graphic elements that evolved through the convergence of newspaper, television and Internet design, which can be applied to the visual delivery of multi-media information. Cooke assessed that along with "a culture of information acceleration" the "scan and go" design of newspapers and the "videographic" presentation style of television (e.g. CNN's modular screen design) that evolved as "the pace of everyday life increased during the 1980s," developed into a "highly-scannable information module presentation style" that enabled the eye "to quickly grasp the relationship between items" (p. 19). Essentially, scannable design is multi-module design that compartmentalizes information for easy recognition by readers. Examples of this multi-module, multi-point-of-entry design are evident on newspaper front pages, television news screens, and website home pages.

Studies indicate that readers prefer to access information on the Internet quickly, and scannable design aids that process (Lynch & Horton, 2008). However, compartmentalizing information, or "chunking" as it is know in Web design, is intended to aid in navigating information online (Lynch & Horton, 2009, para. 1, 6), not to foster attentive, in-depth reading.

Scannable design, a development of visual convergence, seems more favorable to quick reads and short attention spans than an aid to readers' comprehension of long-form narrative journalism. Although scannable design may increase the speed at which readers recognize relationships between news content, Cooke did not indicate that it aids reader

understanding or comprehension. And while Cooke indicated that scannable design grabs readers' attention, she did not indicate that it holds readers' attention. Its intended purpose seems more to guide readers from one point of entry to another as quickly possible, with some of those points of entry being advertising.

According to Nerone and Barnhurst (2001) the traditional relationship between news content and advertising in media organizations changed partly as a result of efforts to monetize online content. In their early study of digital design they indicated online news sites were designed to generate a "stream of revenue," which is partly the reason for their visual "excesses" (p. 473).

Page design, critical to both written and visual communication in newspapers and online, is equally important to the presentation of advertising. Contemporary newspaper design techniques attempt to isolate news content from ads using text, rules, "white space," and "screens" as separation devices. Contemporary online design intentionally positions ads close to editorial content in keeping with the advertising interests of media organizations "to maximize opportunities for 'point of contact' brand engagement and to collect data for consumer profiling" (Lister, Dovey, Giddings, Grant, & Kelly, 2009, p. 173).

Lynch and Horton indicated, "The ideal web interface should never compete with the page content for the user's attention" (2008, p. 111). However, new forms of online advertising intended to produce revenue streams—such as banner ads, search text advertisements, interactive rich media, and streaming audio and video—compete with news content, including visual narratives, for readers' attention. Leckner concluded that newspaper ad sales managers have a different intent from newspaper producers and

quoted renowned international news designer Mario Garcia that to attract newsreaders "effort must be placed on design in order to keep readers' interest focused" (2012, p. 166).

Positioning ads close to news content makes it more likely readers will notice the ads rather than stay focused on news content (Leckner, 2012, p. 177). A glance at many news websites reveals online design makes few attempts to separate news from ads or other content. Although newspapers and magazines also position advertising near or next to editorial content, there are significant differences between print and online.

> In a time of distractibility, a [news] paper...keeps you focused. When we go online, we may start with a news story, but then go chaotically from e-mail to stocks to Google to shopping, and then back to news. But sit with a newspaper, and you no longer are sidetracked. You're focused on just the day's events. There's no 'you have mail' chime to interrupt you. (Patinkin, 2007, p. F1)

It would seem that online design, when it forces news content to compete with adjacent video promotions and attention-grabbing ads, makes reading and viewing narrative journalism anything but "effortless." According to Lister, Dovey, Giddings, Grant, & Kelly, marketing efforts to maximize brand engagement using pop-up ads and product placements adjacent to online news content gave readers the impression of drowning in "a sea of advertising and sponsorship content" (2009, p. 173). The consequence for readers is that they become a "force-fed goose engorged on a diet of virtual consumption sufficient to ensure that a steady flow of actual spend is produced" (p. 173).

Online narratives cannot effectively advance the story or help frame readers'

understanding when they are surrounded by advertising and marketing content designed to distract readers' attention from what they are reading. A narrative that incorporates text, still images, video, graphics, and audio is complicated and susceptible to message interference. Just as the scroll across the bottom of a television screen can interfere with what is being shown and said, narratives that include still photographs, audio, video, movement within still images, appearing and disappearing text, interruptive ads, et cetera, can generate "noise" that interferes with narrative comprehension and meaning.

Constructing multiple media narrative. Attention is what separates relevant information from noise (Carrasco, 2011), and how information is designed or structured influences the attention it receives. Designers are able to influence how we perceive information by determining the structure used to present it, just as authors influence perception by choosing the form (frame) of their stories, for example, short story, play, biography, historical fiction, nonfiction narrative, etc. Slater and Rouner suggested that the aesthetic qualities of messages, which include their presentation or design, have "direct effects" on message credibility and the ability to influence people (1996, p. 974). Design decisions are framing decisions that shape the way a message is received. According to graphic designer Keith Robertson, "Graphic design has become such a central part of our Post-modern visual language, that it has developed into a carrier of meaning at least as significant as the words and images it is presenting" (1993, p. 61).

Hall considered form to be a part of the narrative itself and "much more important than the old distinction between form and content. We used to think form was like an empty box and it's really what you put into it that matters. But we are aware now that the form is actually part of the content of what it is that you are saying" (Hall, 1984, p. 7,

cited in Lehtonen, 2000, p. 82). Form, in other words, is an essential element of narrative construction.

Page design, by the way in which it emphasizes some elements and deemphasizes others, influences narrative form and therefore has a direct effect on our conceptual understanding of its meaning. White space, for example, acts as a framing device that can affect the way in which we develop a specific interpretative meaning. In page design white space is the "empty box." Although it is absent of content, as Hall indicated, it is "part of the content." It is the empty canvas on which content is formed, the blank page on which it is written. White space is the foundation upon which the elements of multiple media narratives are presented on the Web and acts as a frame to shape the message. Accordingly, it has semiotic value. It signifies. For some designers, the presence of white space is a sign that signifies quality. It is the opposite of clutter.

> If we were to draw a continuum of taste from trashy to quality there is one graphic design variable that would constantly grow with the increase in quality—white space. Quality design has developed an association (a code) with white space as its principle variable (or sign). The presence of white space is a symbol of smart, of class, of simplicity of the essence of refinement. The absence of white space is a symbol of vulgarity, of crassness, of schlock, of bad taste. These values are something we all take years to learn at design schools and for most of us as practicing designers, it is an opinion which rules the rest of our working lives. (Robertson, 1993, p. 65)

Lynch and Horton claimed that design on the Web is simply an extension of print

publishing, and that centuries of storytelling in various forms led designers to develop certain "core principles of graphic design" which reflect "how humans read and absorb information" and which have not changed over time (2008, p. 188).

In the early days Web design was mainly about aesthetics—making pages look good. As online technology and functionality became more complex, Web navigation became increasingly important (Horton, 2006). Web design concepts became both use-centered in their aesthetic focus on how websites appeared and were organized, and user-centered in their concern with functionality, ease of use, and lack of complexity (Lynch & Horton, 2008). However, as design critic Alice Rawsthom noted, "our perception of what looks good is becoming increasingly complex, and often contradictory" (2008, para. 4-5).

Nielsen (1999) concluded that it is necessary to take different design approaches with print page design and Web page design to take advantage of the strengths of each.

Print design is highly refined, as evidenced by glancing through the recent [Society of News Design] book of award-winning designs. Web design is impoverished because too many sites strive for the wrong standards of excellence that made sense in the print world but do not make sufficient advances in interactivity. (Nielsen, 1999, n.p.)

Others, however, emphasized that combining design conventions from both print and online was the best approach. Cooke (2005) suggested that visual display on the Internet draws on the design conventions of the media that preceded it. "The convergence of media outlets, technologies, and processes," she noted, "creates a unique cultural/visual environment in which designs distinctive of one medium can easily be

appropriated by other media" (p. 4).

Tom Bodkin, Chief Creative Officer at *The New York Times*, suggested "the magic" of online storytelling design comes from combining classic print design skills with new digital interface skills (Apfelbaum & Cezzar, 2014). Bodkin insisted the fundamental rules of design apply to both print and digital:

> There are basic principles that apply to publication design no matter what
>
> the medium is. It's always about communication. ... In many ways, it's the
>
> same challenge in print and digital; you're telling a story, but using
>
> different tools. ... Adherence to fundamentals makes the adoption of new
>
> tools and forms of media relatively easy. (2014, p. 85)

For Ryan, "the question of how the intrinsic properties of the medium shape the form of narrative and affect the narrative experience can no longer be ignored" (2004, p. 1). Different media, she argued, influences narrative communication differently. How each medium shapes the message determines "in a crucial way" how readers construct meaning. She called this "the configuring action of the medium" (Ryan, 2003, para. 6).

The configuring action of a medium, however, may not always align with the intentions of a narrative's author. Just as "the book is not the movie," the newspaper story is not the Web presentation. Content formatted or designed for one platform does not automatically translate unaltered to another platform, despite pre-existing core principles and design conventions. This is particularly true in the digital world where technology can place limitations on design. The appearance of a Web page on a computer screen differs from its appearance on a tablet, which differs from its appearance on a smartphone. The pliable nature of online communication highlights the notion of

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structure as a "carrier of meaning."

What and how something "means" in any medium, however, in not limited simply to the joining of meanings with forms. Semiotic potential also depends upon "the semiotic resources available to a specific individual in a specific social context" (Kress & van Leeuwen, 2006, p. 8). Media culture professor Mikko Lehtonen concluded it is not possible to distinguish a text from its context. "Narratives are actually 'contextual' in form, which means that they require readers to be familiar with their forms of presentation" (2000, p. 82).

The interactive aspect of online information consumption involves more than simply reading, it involves an active participation by the reader in the process of accessing the information. A readers' relationship with information online is far more "hands-on" than a readers' relationship with information in a printed newspaper. Downloading issues and navigational procedures that interfere with that process can frustrate reader comprehension and affect narrative coherence.

Reducing complexity lessens reader frustration. Psychologist Donald Norman indicated it is not possible for individuals to retain fifteen unrelated things in conscious memory at the same time. However, when the fifteen things are organized into a specific structure the limits of working memory are increased (1998, p. 127). Structure or design, in other words, helps expand both our memory and our understanding of things. "Well-designed objects are easy to interpret and understand. They contain visible clues to their operation. Poorly designed objects can be difficult and frustrating to use. They trap the user and thwart the normal process of interpretation and understanding" (p. 2). Poorly-designed structure and functionality online may actually make it easier for readers to

become distracted and drawn to other content, in effect making what they are reading "invisible" (Schoenbach, de Waal, & Lauf, 2005, p. 247).

On the other hand, Skjulstad (2007) argued that as interactivity becomes "increasingly naturalized" and users "develop 'blindness' to the supporting technologies of the Web" they will become less distracted by the browsing experience and better able to focus on the content (p. 375).

For Lynch and Horton, writing in 2008, the Web was "a young medium with no standards organizations to canonize existing typical page layout practices" (p. 93). Although Web design has evolved, Web page designers continue to rely upon user research studies, current "best practice" techniques, traditional print page design principles, and their own good judgment to guide them in creating effective Web pages.

Page design is similar to grammar in that the relationship established between individual signs contributes to the "narrative inflection" of each sign as well as to the signs that precede and follow. It is similar to syntax in that the arrangement of multiple signs creates larger constituents of meaning. Web page design structures multiple media elements in a specific sequence and spatial relationship, placing them within a field of meaning and joining them into a cohesive whole. The cohesive arrangement of elements on a page is a long-standing design principle that is important to message clarity.

> Cohesion should be one of the designer's prime objectives. He will
> achieve cohesion if he considers all of the elements—heads, pictures,
> text—as a single problem...regard[s] each element as a story-telling
> device...bring[s] type and photographs together in a tightly knit
> arrangement, integrating the gray area of the text with the rectangular

shapes of the pictures, allowing the surrounding white space to achieve

additional impact...permit[s] the shapes of the pictures to dictate their

arrangement on the pages. ...[and] trim[s] non-essential elements so that

the message is clearly and forcefully presented. (Hurley and McDougall,

1971, p. 171)

Even though print design generally structures content as a single unit on a one or

two-page spread, its traditional design principles remain relevant for Web page design.

Nevertheless, while traditional design principles can be applied to online design there are

notable differences between a print page, which can be viewed as a whole, and a Web

page, which must structure content across multiple screens due to the screen's fixed space

limitations.

Some Web usability experts have suggested that "a great print design is likely to

be a lousy web design" precisely because the relationships between elements in print

primarily involve spatial juxtaposition unlike the relationships between elements online

that primarily involve sequential movement (Nielsen, 1999, para. 17). A newspaper page

has a larger pallet on which to design its content; enables designers to create visual

impact by giving graphic elements and typography ample size; integrates photography,

graphics, and text into a single coherent layout; and allows readers to shift attention from

one element to another or from an overall view to specific details without taking any

other action than shifting their view (Nielsen, 1999, n.p.)

A print page is stable and is structured as a single semantic unit with a fixed

relationship between its elements. A Web page is fluid and its construction is complex

because the relationships between the semantic elements on the page are constantly

changing as readers click or scroll to advance through the narrative. Print pages don't require any action from readers other than reading and turning the page. Web pages are viewed in increments the width and depth of a computer or tablet screen and readers not only read a text but also move it and "interact" with it as they read. Printed pages are spatial. Web pages that involve multiple media are both spatial and temporal.

In the early days of Web design Nielsen concluded, "Current web designs are insufficiently interactive and have extremely poor use of multimedia (1999, n.p.). Nine years later Lynch and Horton (2008) still regarded traditional print design as able to achieve a coherence and unity not possible in Web design.

In print layouts the designer establishes the structural relationship between elements and readers view it as presented: The construction of the presentation's message mostly remains in the hands of the designer. In multiple media layouts the designer also establishes the structural relationship between elements. However, interactivity that allows readers to choose the sequence in which multiple media narratives are read rearranges the presentation's structure and potentially its meaning.

Scrolling, or any input from a reader, creates new relationships between textual elements by rearranging them into different semantic compositions or, as Skjulstad (2007) referred to them, "kinetic composition[s]" (pp. 369, 373). For example, when one photograph is positioned above another on a Web page the relationship between the two changes as readers scroll down and the top photograph disappears from view. It changes again when readers scroll down farther and a different photograph, text, video, or graphic comes into position below the secondary photograph.

Hurley and McDougall suggested that newspaper designers should treat vertical

print pages as the equivalent of two horizontal magazine spreads, two separate units above and below the mid-point of the page, to aid visual comprehension (1971, p. 118). This approach has relevance to Web page design where each separate screen can be seen as an individual spatial unit joined sequentially to other individual spatial units.

Lynch and Horton maintained, "A new graphic context is established each time the reader scrolls down the page" (2008, p. 198). They concluded, "Web page layouts should thus be judged not by viewing the whole page as a unit but by dividing the page into visual and functional zones and judging the suitability of each screen of information" (p. 198).

In this sense Web page design is both syntagmatic and paradigmatic: Meaning is found in the sequential order of signs and from their association with other signs. Spatial organization influences how texts are read (Kenner, 2004). By forming spatial relationships between elements on the screen (positioning) and then expanding that relationship to elements on subsequent screens, Web designers can utilize print design concepts to organize narrative elements within a sequential/temporal environment. This approach enables designers to maintain continuity with other related contiguous material. Multiple media narrative coherence relies upon connections between all the elements, not just between related elements.

Web design can assemble multiple media forms into a coherent and meaningful whole across multiple spatial segments, similar to how a photographic essay "develops a set of ideas from frame to frame, building an argument at the levels of context and form, exploiting the possibilities of visual echoes, resonances, repetitions, juxtapositions, absences and discontinuities" (Soske, 2009, p. 4).

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The ability of Web design to effectively incorporate multiple media forms into narrative storytelling greatly expands narrative's storytelling capabilities. Journalism professor Paul Grabowitz noted, "By dividing a story into topical segments...different aspects of stories then can be told in different media formats—text, video, audio, photo slideshows, graphics—that are most appropriate to the specific topic, making storytelling more engaging" (2013, para. 9). Skjulstad observed that website design enables "diverse media expressions to converge into a single text" which may be studied "as relations of multiple compositions geared towards an overall coherence" (2007, p. 361).

Print design can structure long-form narrative content as a complete unit on a single or multiple-page spread using traditional design principles. Web design must structure the same content across multiple screens due to the screen's fixed space limitations. Although readers of Web presentations may not be able to view them spatially as single semiotic units as they can in print, they can view them temporally and sequentially as complete semiotic structures, that is, as a single text.

The semiotic process of reading and understanding any sign is incremental. Interpretation, accordingly, is an ongoing process: Readers do not wait to read the final sentence to interpret what they are reading. Readers create "cognitive representations of narratives" and form "story worlds" as they read, which requires them to store information and make judgments (Emmott, 2008, p. 351). Narrative in this sense can be considered a succession of interlocking elements (Barthes, 1966/1975, p. 270).

Just as readers of narratives retain what they have read as they continue reading, viewers of Web presentations remember the visual patterns they encounter as they view a series of Web screens. These visual patterns, likewise, can be understood as a succession

of interlocking elements or cognitive representations. Sonesson described this awareness of continuity as "the way in which the side of the dice at which we are not looking at this moment is present to consciousness, and the way into which we retain the preceding moment in time, or anticipate the one to follow (retention, protention)" (1993, pp. 42-43).

Music scholar V. Kofi Agawu, in discussing the semiotics of music, noted, "The syntagmatic plane...retains language's commitment to the flow of time, and depends on the gradual unfolding of linguistic meaning during the 'performance' of a given utterance" (1991, p. 6). *Look* magazine's influential designer Allen Hurlburt considered successful page design to be "influenced by...an awareness of its continuity with other related material (1977, p. 94)

Communications professor Anne Marie Seward Barry described how relationships create meaning in film: "In real life there is an optic flow of information in the perceptual process. As the flow continues, all that has come before creates a context for the understanding of what comes next, and the stream of images involves us as if we were observing reality itself" (1997, p.192).

Although traditional print design principles remain relevant for Web page design, adapting universal principles of design formulated for print to an online environment is a challenge for Web page designers "where the spatial relations among on-screen elements are constantly shifting in response to the user's input and system activity" (Lynch & Horton, 2008, p. 198).

Saussure, however, maintained that visual signifiers, which broadly speaking could include both printed pages and Web pages, "can exploit more than one dimension simultaneously" (1983, p. 70). Chandler indicated that although "syntagms are often

defined as 'sequential' (and thus *temporal* - as in speech and music) they can represent *spatial relationships*" as well (1995a, para. 7, original emphasis). Chandler stated, "Spatial syntagms are important not only in the whole range of what we usually think of as visual media (such as drawing, painting and photography) but also in writing—in circumstances where specific layout contributes to the meaning" (2007, p. 110). "Many semiotic systems (including all audio-visual media, such as television and film) rely heavily on both spatial and sequential syntagms" (p. 111). Using this perspective, the syntagmatic relationship between Web page elements can be examined as both sequential (fluid) and spatial (fixed).

Kress (2010) considered page layouts as modes that can create coherent "texts" that represent meaning. The cohesive arrangement of elements on a page is a long-standing design principle important to message clarity (Hurley and McDougall, 1971). Barthes held that organization is essential for any system of meaning and interfering with the normal linear and logical order of a message results in sign distortion, such as "when the different parts of one sign are separated by other signs along the chain of the message...the sign being fractured, its signified is distributed among several signifiers, separated from each other, none of which can be understood by itself" (1966/1975, p. 266).

Disorganization leads to sign distortion. Design is more than simply a way to make Web pages aesthetically pleasing or user friendly. "Discourse and presentation are integrated with semantics" (Drucker, 2008, p. 126). The organization of multiple media elements on a Web page is as necessary to how the narrative means as the organization of words in a sentence are to how it means and are, in a sense, "elements of discourse" (p.

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123). Design structures multiple media forms into meaningful and coherent expression. In page design as in grammar, the relationship established between individual signs contributes to the meaning of each sign as well as to the signs that precede and follow. Design principles, accordingly, can be regarded as syntactic elements that correspond to grammar.

Although distinct mediums can stand alone, they also can be combined to form a larger narrative. Similar to grammatical syntax, page design arranges multiple media narrative forms to create larger constituents of meaning and can be thought of as a system of communication that organizes form and content to make its message clear and understandable. Just as language is ordered structurally through grammar, multiple media forms can be ordered structurally through Web page design and signify meaning.

Hall noted that "any sound, word, image or object which functions as a sign, and is organized with other signs into a system which is capable of carrying and expressing meaning is, from this point of view, 'a language'" (1997a, p. 19). Cohn observed that humans express concepts by "creating sounds, moving bodies, and creating graphic representations" and "when any of these modalities takes on a structured sequence governed by rules that constrain the output—i.e. a grammar—it yields a type of language" (2013b, p. 3). According to Cohn, "The goal is not to make direct mappings between spoken and visual language, but rather to understand how the two systems use analogous functions and units of organization" (p. 7).

The processes by which any narrative is constructed is, of course, subjective and selective: What is left out or de-emphasized can be as important as what is included, or more so. Donis A. Dondis (1973) in referencing American architect Louis Sullivan's

famous pronouncement, "form follows function," recognized that aesthetic concerns [use-centered] must sometimes be sacrificed for functionality [user-centered]. She used an example of an airline designer to show that any aesthetic concerns the designer might have must be limited by "what assembled shapes, proportions, and materials will, in fact, really fly. The final product is shaped by what it does" (p. 5).

Interactive designer Karen McGrane observed that "content and form, structure and style, can never be fully separated" (2013, para. 1). If structure helps shape reader expectations, influence comprehension, and determine meaning, it is likely that the organization of Web pages—how they are designed and function—has a direct influence on the coherence of multiple media narratives. A question for contemporary Web designers in considering the assembly of multiple media journalism narratives from both a use-centered and user-centered perspective is will they not only engage readers but also will they in fact really communicate meaning coherently?

With this in mind, this research considers the following questions:

(RQ1) How do the syntactic, semiotic, and spatial relationships of different media forms help establish coherent and semiotically meaningful stories?

(RQ2) How did the *Snow Fall* project creators mitigate the disruptive effects of technology and interactivity on narrative coherence?

(RQ3) To what degree did the *Snow Fall* project creators purposely focus on the narrative experience in the design of the project?

(RQ4) How do organizational lines of authority, workflow structures, and journalistic routines and values affect the construction of *Snow Fall*?

Chapter 4
METHODOLOGY

> To research, to investigate, is to ask 'why' questions, to seek explanations, however speculatively or tentatively held. If one takes generalization in a broad non-scientific sense to mean 'a general notion or proposition obtained by inference from particular cases' (Concise Oxford Dictionary), then interpretive research is replete with generalizations. (Williams, 2000, p. 212)

In the preface to *A Narrative Approach to Organization Studies*, author Barbara Czarniawska stated, "there is no method, strictly speaking, in social sciences. All there is are other works as sources of inspiration, an array of various techniques, and a systematic reflection on the work that is being done" (1998, p. iv). It is important that methods are used as "loose frameworks" (Atkinson, Delamont, & Hammersley, 1988, p. 243) rather than solid positions because the latter approach may force the data to match the theory or method being used (Fawcett & Downs, 1986).

Qualitative research does not set out to prove a theory. As previously noted, it is not, in fact, a single theory but multiple theories with differing points of view and approaches. It is necessary therefore to choose a research method appropriate to the research question. The theoretical framework and the methods used should match what the researcher wants to know. Otherwise, the researcher runs the risk of committing to a method ("methodolatry") rather than the topic under investigation (Liu, 2011).

Qualitative case studies collect detailed information about a variety of data on a particular "program, event, activity, process, or one or more individuals" (Cresswell, 2014, p. 141) and researchers examine the contextual conditions they believe are relevant to the phenomenon under study (Yin, 2003). This thesis employs a qualitative case study

and uses interviews and thematic analysis to examine the case study data, its context, and the decisions that led to the final public presentation of *Snow Fall*. To create a multiple media narrative of *Snow Fall's* complexity—incorporating text, video, still photography, audio, and motion graphics in a seamless, coherent, flowing narrative without awkward transitions between media—requires considerable expertise and cooperation, which makes it a good data source for the examination of nonfiction multimedia narrative.

Snow Fall Story Overview

Snow Fall is a story about a group of sixteen expert backcountry skiers and snowboarders who, on February 19, 2012—despite previous experience skiing Tunnel Creek, despite being trained in avalanche safety, and despite prior warnings of avalanche danger—triggered a 200-foot-wide by 32-inch-deep "slab avalanche" that buried four skiers in the group, killing three. One analysis of the tragedy described it as an example of how "all too commonly experts fall victim to their own error" (Kelly, 2013, para. 3).

Times' reporter John Branch spent months gathering and reviewing text messages, 911 audio tapes, helmet-cam clips, avalanche data, and interviewing more than 40 people. The more than 17,000-word narrative, believed to be the longest in Times' history (Marshall, 2013), was accompanied online by photography, video, audio, and motion graphics.

Branch wanted *Snow Fall* to be "a tick-tock narrative account" of the day the avalanche happened rather than an analysis piece, or what he called "a Monday morning quarterbacking story" (Branch, 2012, n.p.). Nevertheless, it is both a sequential narrative and an analysis. The analysis occurs not only through Branch's exacting writing, but also through the compelling motion graphics used to explain the "how it happened" aspects of

the accident. The final online product was the result of hours of extensive research by Branch and the interactive media and graphic departments, along with the photography department. In addition to *Snow Fall's* compelling written narrative and motion graphics, what caught the notice of online readers and media pundits alike was the way multiple media elements are interrelated in the construction of long-form narrative.

Case Study

Case studies may use either quantitative or qualitative methods or a combination of the two and can employ either descriptive or explanatory analysis of a person, group, or event (Shepard & Greene, 2003). Qualitative researchers are primarily concerned with understanding a phenomenon from the perspective of the participant, not the researcher (Merriam, 1998, p.6). An explanatory approach requires an accurate statement of the facts, a consideration of alternative explanations, and a conclusion based upon the explanation that is most consistent with the facts (Yin, 1986, p. 59). Explanations are "pattern-matching processes that must fit the implications of the study." An adequate explanation is "a plausible rendition" of a method that "more fully accounts for the facts than do alternative explanations." It is the explanation that is being tested (Campbell, 1975, p. 182).

According to Yin there are five components of case studies:

1. A study's questions

2. Its propositions, if any

3. Its unit(s) of analysis

4. The logic linking the data to the propositions

5. The criteria for interpreting the findings (2009, p. 27).

A descriptive or explanatory case study permits a gradual building of ideas by comparing findings against other statements or propositions (Yin, 1999, p. 143). Focusing on a single case study enables an in-depth examination of the topic and the use of Gertz's "thick description" to extract meaning from the phenomena being observed. Denzin defines thick description as " an interpretation of the interpretations that are present in the recorded situation" (1989, p. 159). A thick description is a close examination of the context of the information as well as the gathered data. It enables researchers to discover patterns of meaning that may otherwise go unnoticed, patterns that Campbell concludes must "fit the implications" of the examined information.

Case studies, by "reporting multiple perspectives, identifying the many factors involved in a situation, and generally sketching the larger picture that emerges" (Cresswell, 2014, p. 186), allow investigators "to retain the holistic and meaningful characteristics of real-life events" (Yin, 2009, p. 4).

A single case study can provide insights and questions that help other researchers develop their theoretical ideas. Single case studies are more about particularization than generalization (Stake, 1995, p.8). However, they may be "generalizable to theoretical propositions and not to populations or universes," where the goal is "to expand and generalize theories (analytic generalization) and not to enumerate frequencies (statistical generalization)" (Stake, 2009, p. 15).

In Schramm's words "The essence of a case study...is that it tries to illuminate a decision or set of decisions, why they were taken, how they were implemented, and with what result" (Schramm, 1971, as cited in Yin, 1986, pp. 22-23).

Interviews. In-depth interviewing seeks information about individuals' decisions,

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values, and occupational ideology or perspective (Johnson & Rowlands, 2001, p. 104), and is an appropriate tool to examine the specific decisions involved in the use of multiple media narratives in *Snow Fall*. In-depth interviews supplement and help triangulate other gathered data. In conducting in-depth interviews, the researcher seeks "the same deep level of knowledge and understanding as the members or participants" (p. 104). In-depth interviews also can help researchers with experience in the same field gain a deeper understanding of familiar concepts (p. 104). The literature review aids categories for analysis as well as topics for the interview questions.

Interviews are conversations between a researcher and a subject, intended to elicit information about a topic from the subject's perspective (Wengraf, 2001). However, interview conversations differ from ordinary conversations in that the researcher directs the conversation toward the research topics (Weiss, 1994; Johnson & Rowlands, 2001). Whether the conversations are frank, open, and honest conversations or evasive, insincere, and dishonest depends largely on the relationship established through interaction between interviewer and subject (Gubrium & Holstein, 2000).

Qualitative interviews provide case studies with details about how an event came to be or a process occurred. Interview questions provide insight into specific topics or problems the researcher desires to investigate. Participants' explanations can bring their perspective to the analysis and provide meaningful personal details not otherwise available. Through careful observation and note taking during the interview process, the researcher can gain useful insights into the participants' responses and observations, providing yet another layer of meaning to the data collected.

Good questions help prompt good answers. The opposite also holds true. Perhaps

the most serious issue for qualitative researchers is under-theorizing their data, assuming that the information provided by participants "can be simply extracted and quoted, as the word of an omniscient and disinterested witness might be accepted at face-value in a law-court" (Wengraf, 2001, p.1). Interviews, however, are not simply a gathering of information from a "disinterested witness." Using data to support assertions "requires assumptions and contextual knowledge and argument" and loosely structured frameworks still require the interviewer to attend closely to the process used and to clarify questions and inferences (p. 1).

A researcher can introduce bias without even being aware that he or she is doing so. It is important, therefore, for the researcher to focus on the meaning the participant attaches to the issue and not on the meaning the researcher brings to the study or finds in the literature (Cresswell, 2014, p. 186).

As with any interaction between individuals, interviews can be problematic: feelings can get hurt, signals crossed, meanings overlooked. As Brennan states, a good interview should "have all the best features of any functioning relationship, and that means genuine interest on both sides, opportunity and respect for both to express themselves, and some dashes of tact and perception" (Brennan, 2013, p. 31).

Interview Process. In total, 17 individuals were directly involved in *Snow Fall's* production: a reporter, a photographer, three videographers, eleven graphic artists and designers, and a researcher. For this explanatory case study in-depth interviews were conducted with five key *New York Times* journalists who participated in its creation: sports features reporter John Branch, who wrote the story; sports photo editor Becky Lebowitz Hanger, who edited the photographs for the story; multimedia editor and lead

designer Jacky Myint, who designed the presentation; videographer Catherine Spangler, who produced video for the story; and sports editor Jason Stallman, who was the editor on the story. As Wengraf indicated, five viewpoints of an event "are, other things being equal, more likely to produce an objective understanding than one viewpoint from one of them" (2001, p. 104).

All interviews were semi-structured and open-ended to allow respondents' comments and opinions to be freely expressed and so lines of inquiry could be followed wherever they led. Follow up questions were asked as required or desired. The researcher shared quotes used and conclusions drawn in this study from the interview information with the interview participants to ensure clarity and accuracy. All interviews were recorded on a digital voice recorder and recorded files were copied to both a secure disk drive and a supplemental disk drive.

Interview questions varied between respondents in order to take advantage of each individual's areas of expertise. Although this made it more difficult to compare interviews, a majority of the questions were consistent from interview to interview to help establish themes in the analysis and to enable a comparison of interview responses from different perspectives.

The number of questions asked of participants was limited to 20 in order to focus on the key aspects of the research questions and limit the interview to approximately one hour or less. A list of basic interview questions is included in Appendix D.

All interviews were by telephone at a time determined by the participants so the interviews could proceed without interruptions. The interviews were conducted between January 30 and March 10, 2014 and recorded on a digital voice recorder connected to the

telephone line. All but one of the interviews was conducted while the participants were at work. The purpose of the interview was explained in advance to participants and notes were taken to assist with transcription and to aid in interpretation. Follow up responses to interview questions were required in some instances. All participants read and signed a letter of consent before the interview.

A voluntary, brief personal "bio" of the participants was obtained in order to understand their role in *Snow Fall*'s production and their relation to others involved. This was done to provide insight into how participants' backgrounds may have influenced their observations and to provide a clearer understanding of their perspective, which was useful when analyzing data.

The researcher transcribed all interviews, research notes, and research observations, which helped develop a solid familiarity with the data. All interviews were transcribed to preserve non-lexical vocalizations, such as pauses and repetitions that could have meaning in analyzing the text. Once transcribed the interviews were listened to at least twice more and compared with the written transcript to ensure transcription accuracy. Data was analyzed following each interview transcription.

All transcriptions were analyzed multiple times and compared to find patterns of meaning within the data. In examining data patterns and relationships within the text, three "modes of reading" were used for the interviews and the textual analysis: a focus on the literal content to help the researcher better understand intended meaning, a reflexive focus to consider the researchers' orientation (and to eliminate potential bias), and a final interpretive focus through a comparison of the literal and reflexive modes (Crabtree & Miller, 1999). It should be noted that this researcher agrees with Elliot and Timulak that

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researchers should be familiar with previous research on the topic they are investigating and that bias is necessarily a part of the process.

It is now understood that bias is an unavoidable part of the process of coming to know something and that knowledge is impossible without some kind of previous conceptual structure. Far from removing the researcher's influence on the data, remaining ignorant of previous work on a phenomenon simply ensures that one's work will be guided by uninformed rather than informed expectations. (Elliot & Timulak, 2005, p. 148)

This researcher worked as a visual journalist in the newspaper industry for more than 35 years and during that period emphasized the essential role of photography and design in the communication process. The importance of bringing a reflexive focus to qualitative research is not to eliminate researcher bias, but to minimize its effect on the interpretation of the results.

Thematic analysis. Thematic analysis "is probably the most common qualitative data analysis method used in qualitative social research" (Guest, Namey & Mitchel, 2013, p. 13). Thematic analysis is a flexible research method that involves searching through data to identify recurring patterns for interpretation: It consists of reading through data, identifying themes, coding the themes, and interpreting the themes (p. 13).

A benefit of thematic analysis is that it is broad and flexible and lacks the complexity of other methods. However, this can be a limitation if it makes it makes higher-phase analysis more difficult or prevents the researcher from focusing on the correct areas of data analysis (Braun & Clarke, 2006, p. 27). The interpretive power of

thematic analysis is limited unless a proper theoretical framework is applied to the data to anchor the claims made by the researcher (p. 27), and "Rigor lies in devising a systematic method whose assumptions are congruent with the way one conceptualizes the subject matter" (Reicher & Taylor, 2005: 549).

As with most qualitative research, thematic analysis "involves an interpretive, naturalistic approach to the world... study[ing] things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them" (Denzin & Lincoln, 2005, p. 3). The researcher may use his "prior experience with the phenomenon, or ...literature about the object of inquiry" to compare units of text that he interprets as representing some aspect (theme) of the topic being studied (Floersch, Longhofer, Kranke, & Townsend, 2010, p. 409).

When applied appropriately, thematic analysis can produce significant insight into research questions. When not used properly, however, "it has limited interpretative power beyond mere description" (Braun and Clarke, 2006, pp. 28-29).

Analysis Process. Thematic analysis was used to examine data gathered from the interviews of *Snow Fall* participants and from the *Snow Fall* presentation's overall design structure. *Snow Fall's* presentation was compared with that of *Punched Out*, an online *New York Times* long-form nonfiction narrative published a year before *Snow Fall* that related the ruinous effects of brain damage and drug abuse on the life and death of a professional hockey "enforcer." *Punched Out's* presentation involved several of the same journalists who participated in *Snow Fall's* creation and also included text, photography, video, audio, and graphics. These presentations, along with the interviews, were examined for issues of interest to narrative construction and coherence.

Interview themes—core categories or "patterns of meaning" that aid analysis—were identified from reading and rereading the interviews and significance determined by both the frequency of themes and their relevance to narrative construction and coherence. As patterns emerged they were highlighted and labeled. The researcher constantly compared interviewee responses and the other data (literature review and case study), taking care to select themes appropriate to the research questions and to ensure deductive interpretations of the data were consistent with the theoretical frameworks. Four themes were identified from the data using an open coding process: reader engagement, narrative flow, fitting the medium to the message, and collaborative journalism. Each theme was re-examined separately and linked, either directly or indirectly, to the research questions and the literature, then analyzed to understand what they revealed about the topic—its meaning and implications. Findings and interpretations were explained using examples consistent with the data (Table 1).

Triangulation protocols (using different perspectives to confirm results) were used to ensure accuracy (Stake, 1995). The type of triangulation protocol used was methodological triangulation—applying one approach followed by another to increase confidence in the conclusions (Denzin, 1989), in this case, medium theory, narratology, framing theory, interview responses, and literature review.

To avoid the pitfalls that can result in a poor analysis, this study follows Braun and Clarke's (2006) 15-point checklist of criteria for good thematic analysis (Table 2). Among the suggestions are: transcribing data to an appropriate level of detail, avoiding an anecdotal approach to coding, checking themes against original data, and insuring consistency between the described method and the reported analysis.

Stake's "critique checklist" criteria were used to assess the final reports' overall quality (Table 3). Among these suggestions are: developing issues in a scholarly manner, providing an overall conceptual structure to the report, avoiding either over-or under-interpreting assertions, and examining personal intentions for bias.

Coding. In conducting a case study a researcher produces data through interviews, observations, notes, and reading. Sociologist Michael Quinn Patton (2002) indicates no formula exists for the transformation of data into findings, findings simply "emerge."

The challenge of qualitative analysis lies in making sense of massive amounts of data. This involves reducing the volume of raw information, sifting trivia from significance, identifying significant patterns, and constructing a framework for communicating the essence of what the data reveal. (p. 432)

The reason to organize and code data is to separate redundant or superfluous information from relevant information, and enable the researcher to analyze data more efficiently (Polkinghorne, 1995). Coding is a means of comparing data throughout a research study in order to explain how meaning is determined. It is not a paraphrase of the notes and information. It identifies both the main categories and subcategories so data can be categorized. The goal in coding interview transcripts is to link what the study participants say with the concepts of the research. Researchers can develop a list of coding categories or themes from the data, other related studies, and other models or theories, which can be modified during the analysis as needed (Zhang & Wildemuth, 2009, pp. 310, 312).

Coding requires that the researcher recognize patterns and themes that emerge

from the data. To recognize these patterns and themes the researcher must develop a familiarity with the data through repeated observation and analysis, what Hall describes as a "long preliminary soak" leading to interpretation (1975, p. 15).

A poor analysis of data can have many causes. Among them are a failure to properly analyze the data; using data collection information (such as interview questions) as themes; a failure of the theme to generate a central idea or concept; a failure to support the claims with the data; and a failure to ensure that the interpretations are consistent with the theoretical framework (Braun & Clarke, 2006, p. 26).

Coding Process. A multi-step coding scheme for discovering and analyzing themes was used in this study and followed Braun and Clarke, 2006; Cresswell, 2014; Löfgren, 2013; and Stake, 1995.

All interview transcripts were read through quickly and first impressions were noted. Relevant pieces of data—words, phrases, and sentences—were labeled. As themes appeared out of the data, information was categorized or coded for further analysis. Codes and data were analyzed throughout the research process and what was noticed and recorded was reviewed and synthesized using the words and observations of the participants and the research literature to support theme development. Themes were established using several sources of data and/or perspectives from several participants in order to ensure triangulation. Once all the data was coded and the themes established all data was reexamined in light of the established themes to determine if adjustments to the coding scheme were necessary.

Theme relevance was determined for one or more of the following reasons: the category is repeated in several places; it is surprising; the interviewee explicitly states

that it is important; the researcher read about something similar in previously published reports or articles; it reminded the researcher of a theory or concept; other reasons that appeared to be relevant (Lofgren, K. (2013, n.p.).

Results were interpreted in light of similar or previous studies published in relevant academic journals and articles, theories or concepts related to this study, or other relevant aspects.

Ethical Considerations. All participants were treated in accordance with the ethical guidelines of the American Psychological Association (APA) and the University of Missouri Institutional Review Board (IRB). There were no identifiable risks involved in participating in this study. However, several ethical considerations were kept in mind.

The researcher has been involved in news photography and newspaper design for over 35 years and is known in parts of the journalism field for his strong advocacy for visual communication, including effective visual design. Accordingly, the researcher remained aware of the potential for opinion bias to influence his questions and interactions with participants as well as his interpretation of the data.

The researcher interviewed individuals in this study with whom he is acquainted both professionally and personally. All personal information gathered during this study was handled with integrity and honesty and consent forms were provided and signed by the participants before the interview process occurred. The information quoted and the conclusions drawn from the participant interviews were shared with the respondents for their review and consent when considering its use.

The researcher made certain that respondents were aware of the study, understood its purpose, gave informed consent, and understood their right to refuse to participate

and/or withdraw from participation at any time. No participants requested privacy or anonymity during this study. The results of this study were shared with the participants for their review and to ensure accuracy and completeness. Finally, interviews from this case study were kept on a secure, encrypted hard drive belonging to the researcher.

These ethical considerations were incorporated during the research design stage.

Chapter 5
FINDINGS

This case study uses thematic analysis and interviews as well as scholarly

literature and methods from framing theory, medium theory, and narratology, to analyze

the multimedia presentation *Snow Fall: The Avalanche At Tunnel Creek*. Results indicate

competing media forms can be combined to create a coherent and meaningful nonfiction

narrative by adhering to the fundamental principles of narrative construction,

presentation, and design. Some results support findings of previous studies discussed in

the literature review. Other results suggest possible new approaches to online nonfiction

narrative construction.

Interview Responses

Participant responses to the interview questions revealed four codes that are

important to multiple media narrative construction *and* to the research questions: joining

multiple media into a seamless narrative structure so as not to interfere with or

complicate narrative continuity ("narrative flow"–RQ1); selecting the appropriate

semiotic mode or "system of signification" to convey the intended message in the most

relevant and meaningful way ("fitting the medium to the message"–RQ2); attracting

reader attention and keeping it focused on the main narrative ("reader engagement"–

RQ3); and cooperation among journalists with different skills to achieve the best results

("collaborative journalism"–RQ4).

Reader engagement and narrative flow. Reader engagement applies to the

importance the participants placed on capturing and holding the readers' interest in the

narrative, which relates to RQ1: How do the syntactic, semiotic, and spatial relationships

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of different media forms help establish coherent and semiotically meaningful stories?

Narrative flow applies to the steps the participants took to ensure *Snow Fall's* construction was "seamless and coherent," which relates to RQ2: How did the *Snow Fall* project creators mitigate the disruptive effects of technology and interactivity on narrative coherence?

In an interview shortly after *Snow Fall* was published *New York Times* graphics director Steve Duenes said he wanted the online experience to feel "natural," and not "like a puzzle or something that has to be figured out, but as you read it just makes sense. … The experience sort of absorbs you. That was really the intention—to try to get closer to a *seamless and coherent* article [emphasis added] that included all of the elements that made the article strong" (Sonderman, 2012, para. 6).

The interview participants for this case study put concern for the reader experience, particularly reader engagement, at the top of their "to do" list. Simplicity, sophisticated technology, concern for reader experience, multiple media narrative construction, and cooperation among journalists were all connected in the responses of the participants. Participants mulled over a number of questions related to reader engagement: how to use hyperlinks, where to place video within the written narrative, how many photographs should be included, should they make the reader click on a video to play it or to have it play automatically, should they write about the science of avalanches or explain it graphically, how long should a video run, should they embed the videos or have them play in a separate viewer?

"The intent," according to Sports Editor Jason Stallman, "was for everything to feel necessary and crucial. Nothing was an adornment or a sidebar" (J. Stallman, personal

communication, March 5, 2014).

Photo editor Becky Lebowitz Hanger explained the goal was keeping the reader focused on the main narrative.

> When we were talking about how it was going to look online, the original
> pitch was that when you read a story you usually read the story and then
> the photo is over here and you can click away to a slide show and it brings
> you to a new page; or there's a video and you have to take your eyes away
> from reading to watch the video; or there's a graphic and the graphic is up
> at the top of the page and you have to scroll upward. And so the idea of it
> was, 'Let's try to make one [medium] flow into the other [and] into the
> other so it just feels like one long experience.' (personal communication,
> March 6, 2014)

Strictly speaking a linear narrative is chronological: it arranges events in sequence. In nonlinear structured narratives readers connect what came before and what came after (i.e. cause and effect) even though the events are not chronological. In either case, the more narrative continuity is disturbed the more likely it is that readers will not make the connections essential for narrative coherence and meaning.

Snow Fall journalists intentionally limited the amount of interactive content. All of the motion graphics (but none of the inline videos) play automatically as the reader scrolls over them, limiting the ability of readers to disengage from or reorder the intended structure of the overall narrative, insuring narrative flow and focus on the intended message.

Although readers can choose to view videos and slide shows, both the length of

videos and the number of photographs in the slide shows were limited in order to reduce the time readers spent with those mediums so as not to interrupt the narrative "flow." Reporter John Branch said they were aware that other media could influence the reading of the written narrative and they asked themselves, "If someone is going to click on the video, do we want them to be immersed in the video for very long before they come back to the text?" The answer was "no." Controlling the reader experience, Branch noted, was a way to keep readers engaged.

> We really wanted to keep people engaged. And in some ways I think we really controlled the way the reader experienced the story because they read and then something would unfold before their eyes and then they would continue to read [and] something else would unfold before their eyes, as opposed to giving them a lot of options. I think we were able to control the way they experienced it, and you know there's probably good and bad in that. But I think for *Snow Fall* it certainly worked. (personal communication, January 30, 2014)

Despite giving readers something that "would unfold before their eyes," Branch also made it clear they tried not to interrupt the reading experience.

> We didn't really want to distract the reader. Sometimes if you go on a page and it looks completely busy, you overwhelm the reader...and maybe a reader will read three paragraphs and their attention span will drift over to something in the margins and they'll click on something and they never really follow the arc of the story. (personal communication, January 30, 2014)

The "not giving readers a lot of options" approach kept readers from exploring content that might have distracted them from remaining focused on the overall narrative. Videographer Catherine Spangler said, "It's a very 'Timesian' thing to pair things down and edit down to, hopefully, something that's less cluttered and more elegant. But there was definitely a lot of discussion about 'this is a great section of copy, let's just let it flow'" (personal communication, March 3, 2014).

Branch also indicated the editing efforts were focused on keeping the reader moving through the story, to keep it "flowing." Flow is a concept that ran throughout the interviews and was usually used to describe the desire to keep the story narrative moving forward without hindrance from other media:

- "The intention was to give that illusion of seamless flowing." (C. Spangler, personal communication, March 3, 2014)

- "The idea of it was, 'Let's try to make one flow into the other into the other, so it just feels like one long experience.'" (B. Lebowitz Hanger, personal communication, March 6, 2014)

- "We just wanted to give you that flow. ...Linking just disrupts the flow." (J. Myint, personal communication, March 10, 2014)

- "It all seems to be flowing in one direction." (J. Branch, personal communication, January 30, 2014)

Multimedia editor and designer Jacky Myint indicated the organizational aspects of the editing process on *Snow Fall* differed from how it was before the redesign of their website. Before the website redesign multimedia, video, and graphics editing was separate from the story editing. *Snow Fall*, she said, was an attempt to get away from that process and to edit all of the elements as a whole—a complete story. "I think the biggest [design] challenge was editing...just putting things in, taking them out, [and] seeing how it worked. So it was an iterative process" (personal communication, March 10, 2014).

Myint said the fact that *The New York Times* website at the time "could be a little cluttered," was a factor that led to "a more minimalist [design] approach to the presentation" (personal communication, March 10, 2014). The reorganization of the workflow helped make the group more conscious of the overall reading experience.

I think we were reacting to that [cluttered appearance] and how we wanted the experience to be...We were really conscious of editing, and just including the elements that we thought were necessary, not putting too much in. I think at one point we did have a lot more photos in the first part of the story and we took some out. I think we were conscious of not distracting [readers] from the reading experience. (J. Myint, personal communication, March 10, 2014)

Presentation affects content by how it selects and organizes information. Myint said she tried to maintain a rhythm when designing *Snow Fall's* pages, and the placement of various narrative elements within the presentation was as important as the elements included. "Their placement, size, and pacing...has a huge role in the experience," she said (personal communication, March 10, 2014).

Videographer Catherine Spangler noted, "It was a very deliberate choice to not give the reader any opportunity to be pulled out of this organic reading experience and go somewhere else." She indicated, for example, that the use of hyperlinks to unrelated content in *Snow Fall*, would have "just given people another distraction" (personal communication, March 3, 2014).

Stallman indicated there is "a time and place" for hyperlinks, but also said they would be "a distraction" in *Snow Fall*.

So much of the experience we were trying to create—and again it's open for debate whether we achieved that—but what we were trying to create is a riveting tale that people felt from the time they landed on the entry page until the very end they couldn't pull themselves away. And we thought it would be counterproductive to have them jumping away from that story constantly. The same reason that the videos were embedded into the presentation rather than taking you to a separate video player, which so often happens in a news story. We wanted everything to be right there and happen naturally so you didn't feel like you were jumping back and forth. (J. Stallman, personal communication, March 5, 2014)

Spangler said they used the term "interrupters" for media that played automatically as readers advanced down the page. She said they considered the term ironic because they "were trying to craft [multimedia] as elements that would in no way interrupt the story. But that's how we were placing them on the page, so it became kind of a joke. These are the interrupters. You have to watch them, but hopefully they are not interrupting your experience" (personal communication, March 3, 2014). The key was to integrate potentially distracting multimedia elements so they enhanced the narrative without interrupting the narrative flow.

To keep readers attention focused on the "arc of the story" Spangler said the group asked themselves "where can we place this [multimedia] so that it feels the most natural ... and [can] really be helpful [to readers] in understanding the story" (personal communication, March 3, 2014).

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Simply positioning media elements where they feel the most natural and helpful does not necessarily ensure readers will engage them, however. That's why, Spangler explained, the group wanted to take "the last barrier of a 'click' away" from readers by having certain motion graphics and videos play automatically without reader interaction. It would ensure readers were "forced into experiencing this new piece of media," in a way that was natural to the overall narrative and didn't interrupt its flow (personal communication, March 3, 2014).

Branch also stated that the design team, in addition to "trying to set a mood that fit the story," tried to keep the readers "inside the story." The *Snow Fall* design was "a very simple, very white background for the most part, nothing too obtrusive. Things appeared slowly. The whole thing was a more relaxed experience, I think, than [the experience of] readers clicking on a page and hav[ing] fourteen options to choose from and [deciding] themselves where to go" (personal communication, January 30, 2014).

Branch said he was proud of the fact that every decision made to include or not include multimedia and how to edit it "was made with one thing in mind, and that is, what's the best for the reader to try to understand the story" (personal communication, January 30, 2014).

> And, you know, that's something were going to continue to fight ...
> making sure that our priorities are not such that we're doing something
> just because it's cool, or because we're first, or anything else, but it's
> because it's what's good for the reader. (J. Branch, personal
> communication, January 30, 2014)

Fitting the medium to the message. The third category applies to the intentional use and careful selection of a particular medium for a particular purpose and relates to RQ3: To what degree did the *Snow Fall* project creators purposely focus on the narrative experience in the design of the project?

Snow Fall generated considerable commentary online concerning the manner in which its multimedia was incorporated into the overall narrative. Rebecca Greenfield of *The Atlantic Wire* was one of several commentators who praised *Snow Fall* for the way it "integrates video, photos, and graphics in a way that makes multimedia feel natural and useful, not just tacked on" (2012, para. 1). Greenfield called the presentation "distraction-free design" (para. 13).

Branch explained that what people found compelling about *Snow Fall* was how it incorporated digital technology into the narrative.

> Certainly as good as the print version was, it was the online version that
> really captured everyone's imagination and everyone's attention. I can see
> why because I think the digital experience is a more immersive
> experience...The experience allows readers to see the graphics in motion,
> which I think is an element that you obviously can't duplicate on the page.
> It adds something when you see the flyover of the imaginary helicopter
> you are in spin and turn around to the backside of the mountain. That's a
> different experience than a two dimensional graphic. When you click on
> the [video] interviews of the people you can see what they look like. You
> can hear what their voices sound like. You can hear the hitches in their
> voices, see the tears in their eyes. ... The readers who read this in the paper

never experienced that. (J. Branch, personal communication, January 30,

2014)

Stallman, too, spoke of the "being there" sensation multiple media brought to the

overall experience of *Snow Fall*.

You call this up on the desktop browser or on your iPad and you really

feel like you are, as the one person described as we were going through

this at one stage, "When you call this up you feel cold." You feel like

you're cold on a mountain feeling that breeze. It just really puts you there.

And that's a sensation that is difficult if not impossible to capture on

printed-paper. (J. Stallman, personal communication, March 5, 2014)

Branch alluded to how digital technology helped create a "mood" that supported

the overall tone of the narrative. For example, parallax scrolling is a scrolling technique

used in *Snow Fall* in which the foreground and background on the screen move in

relation to each other, creating a "curtain effect" in which one element raises or falls to

cover another. Text can rise to cover a photograph or graphic and vice versa. Branch

noted that its use in *Snow Fall* seemed to unite the various multiple media elements and

add a sense of downward movement.

In a weird way—and I don't mean this to sound as crass as it might sound,

but I also think it made sense for this particular topic—it was a story about

an avalanche [and] there was a certain mood we were trying to create. I'm

not trying to say that we tried to create [the feeling of] an avalanche by the

way people scrolled down, but I think [parallax scrolling] was all part of

that mood, and it just sort of felt right with this. It was a singular story and

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you just continued to move down and down and down through it as

opposed to bouncing around through various elements and through various

pages. ... We tried to take all these elements—words, pictures, graphics,

videos—and blur the lines between those things. And I think that parallax

scrolling allows you to really blur those lines in ways we hadn't done

before. (J. Branch, personal communication, January 30, 2014)

It is important to note Branch's emphasis on *Snow Fall* as "a singular story,"

rather than a collection of different story elements. The various multiple media, in

addition to the page design, were viewed as semiotic modes to be used as effectively as

possible, "blur[ing] the lines" between the elements to advance an overall single

narrative.

Stallman considered parallax scrolling to be "just another tool" that is often "used

to very little advantage."

I would say nine out of ten pieces online that use [parallax scrolling] either

don't need it, or it's clumsy, or it's ineffective. And it's certainly open for

debate on whether it worked on *Snow Fall*. But our intent was that we had

an extremely long story in terms of words and a lot of elements to bring

readers through. And again, we're asking a whole lot of readers in terms

of intellectual commitment and time commitment. And the parallax tool...

we thought enhanced that experience. It allowed the readers to go through

it in a more engaging way, a more gripping way. (J. Stallman, personal

communication, March 5, 2014)

The Snow Fall presentation contrasts sharply with another long-form, multiple media story Branch wrote the previous year about the drug overdose death of NHL hockey player Derik Boogaard. "Punched Out: The Life and Death of a Hockey Enforcer," was a three-part series with extensive multimedia. Branch explained that one significant difference between the two multi-chapter stories was that *Punched Out* included substantially more multimedia elements than Snow Fall.

Hanger said that although *Snow Fall* deserved a Pulitzer Prize she thought *Punched Out* was a better story and also should have won a Pulitzer Prize. Despite its inclusion of multimedia, *Punched Out* did not have a self-contained design structure or employ technically sophisticated elements such as parallax scrolling and motion graphics. Hanger said *Punched Out* did not have the "wow" factor that *Snow Fall* had.

"I do think the video, the interactive video, the interactive graphics, the audio, I think all of that added something [to *Snow Fall*]...gave you a deeper understanding of the story," she observed. However, she added, "It was easy to get romanced" by the presentation's technical sophistication (personal communication, March 6, 2014).

Although *Snow Fall's* multimedia may have "romanced" readers, Branch indicated *Punched Out's* multimedia might have distracted reader attention from the main narrative.

When you went online to read [*Punched Out*] the margins were filled with things that readers could go explore, things from [hockey player Derek Boogaard's] hand written notes, to death reports or death certificates, to videos of other hockey players and family members talking about him. And within the text itself there were hyperlinks. When I mentioned, for

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example, the prairies of Saskatchewan, it was highlighted. You click on it

and see an 8 or 10 photo slide show of the prairies of Saskatchewan. So it

was loaded with things. And here we came a year later with *Snow Fall* and

it swung the pendulum very hard to the other side. ... I think there was a

sense that we didn't want to clutter *Snow Fall* with a lot of so-called "bells

and whistles." (J. Branch, personal communication, January 30, 2014)

Myint also warned against including too much multiple media:

There is always the danger of doing too much. I think you should always

have to be conscious of pulling back when you are doing things like this,

to not do things just because "Oh, wow! That's really cool!" It looks cool,

but does it actually always help the story? You always need to keep that in

the back of your head when you're doing these things. (J. Myint, personal

communication, March 10, 2014)

Stallman took umbrage with the "bells and whistles" phrase, which had been used

in both favorable and unfavorable critiques of *Snow Fall* (Greenfield, 2013; Manjoo,

2013). "These are not bells and whistles. These are tremendous feats of reporting and

they're bringing information that cannot be brought in any other way. It's not a 'bells and

whistles,' it's not an adornment" (personal communication, March 5, 2014).

Branch said the intent of *Snow Fall* editors was to integrate multimedia into the

narrative in a way that did not disrupt the story.

We wanted the readers attention to be focused on the words. And we

wanted every element beyond the words to add something to the story and

keep the reader engaged in a more vertical way and a more scrolling way

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so the person was rolling through the story and was only interrupted, in

terms of visual elements, by things that aided the story and that continued

the reading down through the story on the screen as opposed to clicking

things that took them completely out of the story. When somebody clicks

out of a story to watch a video or to click on some photos you never know

if they ever come back. (J. Branch, personal communication, January 30,

2014)

Additional media, Stallman said, should only be combined when it is "good

enough" and warranted. "People aren't used to seeing these sorts of presentations. So of

course you're going to have people who are put off by it. And like, 'Whoa, what is this?

I'm confused...where do I go from here?'...That [is] a very reasonable response"

(personal communication, March 5, 2014).

Branch noted that the inclusion of multiple media with the written narrative

enabled him to approach the story in a different way.

We had a really cool graphic, and I think we had a video that talked about

avalanches, the science of avalanches. Well there was a chunk of the story

that was written explaining all that science, of how snow works, why

[snow] slides...I knew at some place toward the end, "Wow, this graphic

really tells it better than I can. ...The reader is going to learn how this

works and maybe we don't need to duplicate this in the story." And so it

allowed me to shed some of those tangential, broader topics out of a very

narrow story of what happened to these people, because I knew that

readers would get that information from the graphics. (J. Branch, personal

communication, January 30, 2014)

Branch said he had little doubt that including multiple media in long-form narratives can make complex information simpler and make the narrative "more accessible and likely to be read." It was important that all 16 subjects in *Snow Fall* have an equal voice, but without the inclusion of multimedia Branch said he "probably wouldn't have tried to give voice to all those people." Multiple media enabled him to eliminate explanatory information from his narrative and concentrate more on the human drama (personal communication, January 30, 2014).

Spangler stated that while a traditional story online has to have a beginning, middle, and end, "you have to offer people different options for exploring [stories] in non-linear fashion" (personal communication, March 3, 2014). Stallman agreed that narratives should take different forms and no one form is necessarily the best because people want to consume news and information in different ways.

Some people, he concluded, would consider *Snow Fall* to be distracting or too long and think, "This isn't for me." Nevertheless, he said it was important to understand what each medium is able to contribute to the overall narrative in presentations like *Snow Fall* (J. Stallman, personal communication, March 5, 2014).

> Each [narrative component] was created with the awareness of all the
> others. So, to use one arbitrary example, because we had the motion
> graphic with the [simulated] flyover putting the reader on the mountain,
> we didn't feel like we had a need to have photographs taken from a
> helicopter or something to show readers where things were. Or because
> John wrote about certain things in the story in a really poignant way, we

might have decided we didn't [need] a certain piece of video that does the

exact same thing but not as effectively. So every piece was created and

used with the understanding of all of the rest. (J. Stallman, personal

communication, March 5, 2014)

Branch considered video to be "tangential" to the main written narrative,

complimentary but potentially disruptive. "We want to use them to inform the story, to

help further the story, to help educate the reader. But you don't want, necessarily, the

reader to be wandering down paths and not be able to get them back" (personal

communication, January 30, 2014).

Some videos, Branch pointed out, "somewhat" duplicate information contained in

the story. Many of the interviews Branch conducted were videotaped, and some quotes

from those interviews were used in the overall presentation. However, Branch said he

wasn't worried about duplicating the video quotes in the narrative because they were "the

best quotes." The videos served a different purpose than the text. They were placed

within the narrative to help capture the emotional experience of the survivors: "Basically

to put a face on this person going through this...to hear the emotion...to engage the reader

in a way, to connect [the reader] with who these victims are, and see that these are real

people, measured people, smart people" (personal communication, January 30, 2014).

Branch cited a video taken by skier Tim Carlson, who was wearing a helmet

camera as he skied down the mountain on the day of the accident. Carlson and his skiing

partner had skied around the avalanche area and were unaware it had taken place. At the

bottom of the mountain they encountered a debris pile and one of their location beepers

activated indicating that someone was buried beneath the debris. Branch said although he

could have described it in words, hearing Carlson speak as he came to realize what he was witnessing "is a powerful moment...something [readers] are not going to get from me as a writer" (personal communication, January 30, 2014).

> We wanted to use the videos in the right places, with all due respect to the victims, to help the reader understand the emotional toll of what happened that day. And the words can try to do it [but] I think the videos are a more powerful way to do it. Or at least [videos] can offer that proverbial one/two punch because you're hearing the voices, you're watching them try to explain what happened to them on the worst day of their lives. (J. Branch, personal communication, January 30, 2014)

Group discussions about which media to include or leave out were frequent, and revolved around whether the quality of the media being considered was good enough and whether including it was the best approach for the overall narrative.

Just as *The Washington Post* reporter Gene Weingarten realized that multimedia might be more effective than the written word in certain instances, reporter Branch realized:

> There is always going to be some element of the population that just wants to read a story in black and white, wants to read a yarn, wants to hear the news, doesn't want to be distracted. But I think the world is changing, that those people are probably more and more in the minority, and the majority of people now expect to see what they're being told, especially in a news story. (J. Branch, personal communication, January 30, 2014)

Many of the multimedia elements in *Snow Fall* helped explain complicated

processes, for example the science of avalanches and the 911 calls reporting the

avalanche, and were "barely broached in the text itself." Branch said these were "strict

add-ons to help the reader with further understanding," noting that writing alone is not

able to provide the same immersive experience of being there that can be found through

multiple media narratives (personal communication, January 30, 2014).

As much as I'd like to think that my words can elicit emotion and explain

to people exactly what it was like to be somewhere, or what it was like to

talk to these people as they're being quoted in the story, there's no

substitute for seeing these people, for seeing their emotions as they're

speaking, for seeing the footage that they took of the mountain that day, of

hearing their voices. All those things that we add[ed] I think certainly add

to the readers experience in ways that simple writing cannot do. (J. Branch,

personal communication, January 30, 2014)

The benefit of multiple media in linear stories, Branch reasoned, was that they

offered "a doorway into a story that maybe doesn't exist in strict[ly] text." He maintained

the ability of multiple media elements to interfere with reader coherence "depends on the

story" and how readers approach it. *Snow Fall*, he pointed out, was written in "a linear

fashion, in basic chronological order [and]...it might be hard to pop into the middle of it

and get a full appreciation of what's going on" (personal communication, January 30,

2014).

If there's a picture or a video, or a graphic, or something, then I think that

might be more likely to pull a reader in. Maybe a reader who was just

skimming through the whole thing will stop there and actually start

reading. ...I think for this story it probably pulled people in. But I think

readers would probably find themselves wanting to go back to the

beginning to understand the full complexity of the story because it was

such a chronologically written piece. (J. Branch, personal communication,

January 30, 2014)

Stallman agreed that multiple media provided multiple doorways into a story.

However, he was not of the opinion that "merely combining media alone, period, is

always going to be a good and virtuous thing...It has to be done carefully and with a fair

amount of judgment and discretion" (personal communication, March 5, 2014).

I would never espouse that everything we do in the news world should

have video and audio and graphics and text and all of that. It should when

it's warranted and when the stuff is good enough. But there are other times

when things can be just as powerful when you just have one of those

things. (J. Stallman, personal communication, March 5, 2014)

Collaborative journalism. The final category applies to the organizational

structures put in place to create effective workflows and ensure cooperative editing in the

construction of multiple media narratives, and relates to RQ4: How do organizational

lines of authority, workflow structures, and journalistic routines and values affect the

construction of *Snow Fall*?

An advantage of digital technology is its ability to combine information of any

kind in any form. Although authors generally create the organizing structure that guides

readers from one point in the narrative to the next, the integration of different sets of

codes in a multiple media context requires specialized knowledge that can complicate the organizing process (Howells & Negreiros, 2012).

The construction of narrative has changed little over the centuries: The storyteller establishes relationships between narrative elements, privileging some over others, to create a coherent structure that leads to meaning. The construction of a multiple media narrative, however, inevitably employs a structural organization that emphasizes some modes or systems of signification and deemphasizes others. The combination of the various modes and the relationships between them determine the coherence and meaning making success of the overall narrative.

Multimedia storytelling is a collaborative process that extends the boundary of the narrative across multiple formats. Although collaboration may not lead to better narratives, better narratives are not possible without a significant collaborative effort on the part of the journalists participating in the creation of multiple media narratives, as was indicated repeatedly by all interview participants.

Erdal listed three categories of multi-platform media organization: single-reporter multiplatform journalism, in which a single journalist produces content for multiple platforms; cross-media journalism, in which various journalists from different platforms coordinate their efforts and share content informally; and multiplatform "orchestration," in which journalist from different platforms share raw material and cooperate in producing a story (Erdal, 2009, p. 192).

Editing any large project for a news website can be complicated, and including multiple media and multiple individuals in a project adds multiple layers of complexity. *Snow Fall* combines both cross-media journalism and multiplatform orchestration in its

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organizational structure. However, the degree of cooperation and coordination exhibited in its creation places it more in the orchestration category.

All five journalists involved in *Snow Fall* continually mentioned the importance of teamwork and cooperation to its success. During the initial group conversations about the project, Branch said, suggestions that some of the text might need to be altered "to make them transition better" with the graphics, and that certain quotes be removed from the text so the same quotes could be used in the video interviews, were "not well received" (personal communication, January 30, 2014).

Some felt the text was "sacred" and the visuals should build around the text rather than having the text build around the visuals. However, organizationally, Branch said they all agreed to "just keep going with this and we'll fight that battle down the road."

After many meetings and considerable discussion every participant came to appreciate how critical collaboration was to the success of a multiple media presentation. In the end, the "push to change the words to fit around the visual experience turned out that it was really much ado about nothing," Branch said. "All the graphics worked their way around the text and no text was different in the print version or the digital version" (personal communication, January 30, 2014).

> Frequent meetings were an important part of the workflow and editing processes. *Snow Fall* is probably the prime example within our newsroom to show if you involve all the different departments early on in the process then bigger things can happen. ...Ten years ago I would guess on a typical story I would be 80% of the way through the reporting process when we would start to involve video or photo. And these days it's probably 20% before

we stop and say, "Okay, what are the possibilities here with photo, video, graphics." So, more and more they're becoming part of the process as opposed to an afterthought. (J. Branch, personal communication, January 30, 2014)

Spangler said *Snow Fall* was a "very collaborative" effort that took "a lot of experimentation" and "a lot of iterations on all sides," and she attributed the success of the editing/design team to sharing the same vision (personal communication, March 3, 2014).

I would say the process broke down the traditional newsroom hierarchy of there's one editor, there's a copy editor, there's the writer, and took a more populist approach, at least in the production aspects of it. I think, of course, at the end there always has to be a grand vision that's either shared by everyone or contained in one person who's staying true to that. And I think we were really lucky in the sense that we were all literally on the same page. (C. Spangler, personal communication, March 3, 2014)

Spangler did not suggest newsroom anarchy, however. "You have to have a populist approach when you're actually making things," she said, "and then come back to the traditional, 'Here's how it's going to be' from the top editor. ... I think it takes the vision of the people on the top level, top management, but then the passion and grit of the people working with the raw materials" (personal communication, March 3, 2014).

When looking at the digital mockups of the nearly complete online design Branch said the group discussed the ad spots, which had been included at the request of the advertising department, and wondered if there was a way to minimize their effect on the

presentations' appearance and, consequently, the readers' experience. The journalists

expressed their concerns to the advertising department, which recognized the need "to

minimize" the ads and make them "as elegant as possible" (personal communication,

January 30, 2014).

At a brown bag lunch to introduce new CEO Mark Thompson the topic of ads for

Snow Fall came up. Branch said Thompson expressed admiration for the presentation and

asked if ads were really necessary. Branch said "Everybody sort of looked at each other

and said, 'Really? The CEO is wondering why we put ads in that?'" Branch said

Thompson explained his philosophy was, "Well, of course we want to make money. And

if there is a way to do it without harming the story by all means we should do it."

Thompson's comments, Branch related, caused the group to think about advertising

differently. They realized that they needed to take a broader view in monetizing content.

"Every story does not need to make a profit," Branch explained. "We'll make up the

money in other ways because we're doing stories like this" (personal communication,

January 30, 2014).

Hanger credited the number of "amazing" and "remarkably talented" journalists

who worked on *Snow Fall* for its overall success. She explained how the group formed

and suggested that *Snow Fall* may have helped them learn how to do similar projects with

fewer people.

> I think to do a project with the involved graphics that we did, I don't know
>
> that it's possible at other papers simply because they don't have that
>
> department—and [it's] a big department—like we do. Joe Sexton [then
>
> sports editor] is a force of nature and was able to, under the radar of our

masthead, gather all of us...this army of people to work on this project

without ever going and asking permission, which you can only really do at

a big place, otherwise it would be noticed. I think that it would be much

harder to do at a smaller paper where there isn't this large number of

people and this group with this specific skill set. But I think that now that

we did *Snow Fall,* and other papers have done other big projects like this, I

think that there's a template out there and it's becoming easier and easier

to do it, probably with a smaller group of people. (B. Lebowitz Hanger,

personal communication, March 6, 2014)

Stallman emphasized, "There really wasn't one person who was the overlord in

deciding what worked and what didn't. We had so many people invested in it and on the

same page in terms of what we were trying to achieve that when we would look at each

iteration we would collectively work it out and decide what wasn't working or what was"

(personal communication, March 5, 2014).

Although there were seventeen people directly involved in the production of *Snow

Fall*, Spangler said the notion "that there was this enormous team and this enormous

amount of resources poured into this evergreen multimedia story" is not completely

accurate. She noted they "were all juggling multiple projects" in addition to their daily

duties and to working on *Snow Fall*. "It's not like we carved out a bunch of time and

were only working on *Snow Fall*. We did our regular jobs and then also had the luxury of

having some time [to work on *Snow Fall*], but then putting in a lot of personal man hours

to make it work." The dedication of Snow Fall's journalists played as large a role in its

success as cross-departmental cooperation. The success of projects like *Snow Fall*,

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Spangler argued, comes from the "passionate dedication" of the journalists involved who "give their blood, sweat, and tears to these types of projects" (personal communication, March 3, 2014).

Although photo editor Hanger did extensive photographic research for the project most of the photographs she gathered were not used, in keeping with the team's desire for everything to feel "necessary." She said Duenes worked with designer Myint to "streamline" the presentation by removing photographs and then asking Hanger, "Do you really miss them? Doesn't this streamline it?" (personal communication, March 6, 2014).

Hanger found the fact that they didn't consult with her before removing the photographs somewhat frustrating at times, but appreciated what they were trying to do. In the end she said they asked her what photographs she felt should be put back in. "There were so many people working on it and there were so many more working parts than there usually were with a story, and everything just became more involved" (B. Lebowitz Hanger, personal communication, March 6, 2014).

She concluded that the *Snow Fall* project made all of them better editors because it forced them to take a broader view and to consider how all of the components worked together. "You have to be conscious of how it's working with everything else and with more components than you normally would" (personal communication, March 6, 2014).

Times designer Myint admitted, "Aesthetically and technically it's challenging to [design] multiple media" presentations like *Snow Fall* (personal communication, March 10, 2014).

Branch agreed that when and how to use various multiple media components was a concern:

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When you read through the text and got to the graphic that is the flyover

of the [ski] area, it comes up from the bottom [of the screen]. And after it

is done you continue to scroll down below it and it all sort of seems to be

flowing in one direction. We had discussions about how long, for example,

does it sit there before the reader is somehow guided to continue down

[and] how long should those videos be?...The same with those slide shows.

Initially I think those slide shows [contained] eight or ten pictures of each

person. And I think at the end there were four or five [pictures] because

we were a little bit worried that as much as we'd love to run more and

more photos, we're basically asking the reader to step out of the story.

And while we appreciate that to some degree, we don't want them to go

too far out. We want them to stay inside the story. (J. Branch, personal

communication, January 30, 2014)

Branch said group-editing discussions were mostly about reducing complexity.

"After a certain point we said, 'Okay, now we have to shed some stuff because we want

to keep this clean. We want to keep the readers focus on this. So what do we leave out?'"

(personal communication, January 30, 2014).

Stallman explained:

Every [long-form] project has different types of media involved and

different personalities and subject matter and whatever else. But in this

case we had an overabundance of really compelling assets, for lack of a

more elegant term. We had really fantastic storytelling in words by John

Branch. We had fantastic photography by Ruth Fremson. And we had

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really great point-of-view video that was taken by the skiers themselves.

And we had just mind-blowing interactive graphics that were built by our

graphics desk. We had all of these things and the biggest challenge we

faced with this project, and a lot of other ambitious ones, was how do we

bring all this stuff together? It's a lot of stuff. And it's asking a lot of the

reader. (J. Stallman, personal communication, March 5, 2014)

Spangler said the editing team discussed how much the video clips duplicated

information that was provided to readers in the text and decided that the video clips

offered a feel for the character traits and mannerisms of the skiers, as well as an

emotional experience that "brought the characters to life" (personal communication,

March 3, 2014).

Spangler noted, "The pacing was actually a huge thing we grappled with... when

is too soon and when is too late to introduce this complementary [video] experience?"

She indicated that it was a "trial and error" approach that involved placing media in

different areas and having people read through to determine "if it felt like the place where

you would want to get that kind of information." Rather than a duplication of information

in the written text, Spangler, like her colleagues, credits the videos with "offering

[readers] an emotional experience after getting the facts, the chronology, and [the] plot

points from the text" (personal communication, March 3, 2014).

Still, despite the care, judgment, and discretion brought to the *Snow Fall* project,

Stallman admitted it wasn't perfect.

None of us who worked on the project are convinced that any of this was

done to perfection or even to great success. The technology changes so

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rapidly that five minutes after we put out *Snow Fall* there were probably

thirteen new techniques available for us to [make] *Snow Fall* feel outdated.

So it's not as if we'd look back on *Snow Fall* and think, "We really

mastered something there." It was one little moment in time where we put

a bunch of things together and it's certainly by no means a conquering of

the media. (J. Stallman, personal communication, March 5, 2014)

"We were a lot of people," Stallman said, "constantly tinkering and

experimenting and saying, 'Okay. What if we do this?' It was very much a group

collective decision-making process" (personal communication, March 5, 2014).

Although it wasn't necessary for anyone on the project to be an expert in every

area, Stallman insisted, "Everyone needs to be appreciative and respectful" of other

individuals' expertise:

John Branch is in my mind the world's greatest storyteller with words. He

doesn't need to be an audio editor or a video specialist or anything like

that. But when he's involved in a project that has a lot of media he does

need to have an appreciation for those things and a spirit of collaboration

and a willingness to incorporate different elements. And that goes the

same for the graphics editors. The guys who are building the motion

graphics don't necessarily need to be world-class photographers, but they

do need to understand those other media and appreciate them. (J. Stallman,

personal communication, March 5, 2014)

Presentation Structure Analysis

Making connections. A narratives' signification cannot be separated from its

presentation (Sternberg, 1978) any more than it can be separated from the medium in which it is presented. The syntagmatic positioning of elements within a layout gives the elements significance in relation to each other and joins them in an integrated whole (Kress and van Leeuwen, 2006).

Design principles are syntactic elements that correspond to grammar in analyzing visual structure (Smock, 2004). Web pages can be viewed as sequential units that can be read in the same way grammatical structures are read. It is worth exploring this concept in examining how *Snow Fall's* structure differs from other online design presentations.

Branch and others mentioned *Punched Out*, an earlier multimedia presentation that contrasted with *Snow Fall*. It seems appropriate, then, to make a comparison of these two presentations to illustrate how the choices provided to readers and the choices made for them influence the syntagmatic relationship of the overall narratives, a process that is strongly influenced by narratology, framing theory and medium theory.

Punched Out **Web page structure.** *Punched Out* contained three sections or "parts." Part one opened as a single page, acting as the home page for the entire presentation. Parts two and three opened as multiple page sections requiring readers to select the page number to advance through the section. Oddly, linking back to part one from part two or part three opened part one as a multiple page section instead of the single page it was initially. As multiple page sections parts one and three contained seven pages, part two contained six pages. [A Web page is defined in this thesis as an individual section of content that can be accessed in a single scroll.]

Punched Out is part of a basic website design architecture identified by Lynch & Horton (2008): a hierarchically organized navigational structure that guides readers

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through its pages, including links to parenthetical information and to other websites (Figure 4). Organizational tabs at the top of the pages served as an index, a hierarchical approach that standardizes search functions and is often recommended as a best practice for news websites to help make it easier for readers to navigate the site (Lynch & Horton, 2008; Cooke, 2005). *Punched Out's* multimedia narrative was not self-contained. Readers could access much more content than simply a story about hockey player Derek Boogaard.

Although the main narrative and related story elements were the most prominent features and constituted most of the visible content on its Web pages, links to an even greater quantity of additional content were provided through menus, ads, and modular information accessed with a simple mouse click. Web links (hyperlinks) connected readers to additional content by means of a tab, an icon, or a highlighted word on the screen.

Web pages use two types of links (Figures 4, 5, 6): navigational links along the top, bottom, and side of narrative content that are either related or unrelated to the main narrative and that connect readers to other pages or locations within the website; and embedded links within the narrative content that connect readers to additional, parallel, or parenthetical material related to the content being read (Lynch & Horton, 2008).

Punched Out's readers had multiple options to explore additional content. Navigation tabs were organized horizontally at the top, bottom, and along the sides of the pages to help readers navigate to other sections of the website—home page, today's paper, video, most popular, the international and Chinese editions of *The Times*, and other areas. Below these organizational items a section head label identified the section, in this case

"Hockey," displayed in large, bold type centered in the field. Below the section head label additional navigation items (tabs) identifying other sections unrelated to the main narrative were displayed horizontally across the page. The content listed included world, U.S., N.Y./Region, business, technology, sports, opinion, arts, style, travel, jobs, real estate, and autos (Figure 4).

In addition, because the story was located on sports section Web pages, tabs linking to sports categories were provided below the section head and to the right of the story. These included baseball, NFL, college football, NBA, college basketball, hockey, soccer, golf, tennis, global sports, and a link to buy sports tickets to NHL hockey games. Also, links to recently viewed articles and to story recommendations were provided to the right of the main narrative. Additional links to Facebook, Twitter, Google, and email were provided below the story at the bottom of the page.

The main story headline, "Punched Out: The Life and Death of a Hockey Enforcer," was located on the left below the header labels. The story's section labels (part one, part two, part three, and video) were located to the right of the main headline and ran across the page horizontally. A double gray line ran across the page beneath the section labels and story headline, spatially connecting them to the header information above but separating them from the main narrative below. With the exception of a link to an interactive video feature on hockey player Derek Boogaard, most visible links on the opening screen were unrelated to the main story (Figure 5).

Although Web designers try to ensure their designs look the same on most computer browsers and operating systems, different browsers can render the same page differently depending on user preferences, screen resolution, and other factors. According

to AOL's technology site, Tech Crunch, the most popular laptop screen resolution until 2012 was 1280 x 800 (Lardinois, 2012, para. 3).

When using either Firefox or Safari browsers on a laptop computer with a screen resolution of 1280 X 800, *Punched Out's* opening screen (Figure 5) ended just below the opening sentence of the story. A family color photo (approximately 1/3rd page width) of 2-year-old Derek Boogaard positioned below the main story headline and centered above the story was the visual introduction to the story. A text link button to an interactive video immediately to the right of the opening photograph's caption enabled readers to skip the written story altogether if they chose by viewing Boogaard's story in video form. A link to the video was available on every page, and readers could also jump back and forth between the written narrative and the video if they chose. A visual link in a vertical side rail to the left of the story also provided readers with access to the Boogaard multipart video.

In addition to links at the top of the pages to part two, part three, and the video feature, all pages included small color photos and graphics in the vertical side rail to the left of the story that linked to additional related multiple media content (Figure 6). These side rail links also were embedded within the story at locations directly related to the narrative content.

Links to unrelated content, such as hockey ticket purchases and recommended stories, were mostly positioned to the right of the main narrative for approximately the first eight paragraphs (Figure 6). The majority of recommended story links included thumbnail photographs and graphics. A thin gray line ran vertically from near the top to the bottom of the entire opening page between the story and the unrelated links. The

space below this unrelated content remained empty for the remainder of the page. The vertical line distinguished the story content from the unrelated content.

Unrelated links for National Hockey League stats, scores, standings and injuries, also were included in the left side rail. Unlike the story links in the left side rail, the hockey league links didn't include color photographs.

The amount of media available in *Punched Out* was extensive—video, photographic slide shows, single photographs, charts, audio, motion graphics, and documents. Readers could view 16 pages of notes by Boogaard both in the original handwritten form and in type form.

The part one single page (Figure 7) presentation contained long stretches of text with no visual elements beyond the visual media that occupied the top third of the left side rail. Each of the multiple page presentations contained seven or more pages (Figure 8).

The introductory photographs on each section's opening page were displayed the same size and in the same location near the top of the page—relatively small, but prominently positioned. Story-related still images were placed in the side rail. These visual elements linked to photographs, photo slide shows, graphics, and videos and could be selected within the text as well by clicking on embedded icon/text link buttons. Clicking on a visual side rail link or selecting a corresponding embedded text link ("More photos") directly below the visual link enlarged the photograph, played the video, or connected to other related content.

In each section the multimedia elements in the side rails were duplicated on each page, allowing readers to select them no matter where they were in the narrative. Links

embedded in the text, on the other hand, enabled readers to view the visuals only where they integrated with the narrative.

Still images and embedded videos opened on top of the text at half the full-page width (Figure 9). None of the media in the side rail or any of the embedded story links activated without an action from the reader. Readers could scroll through the entire story without selecting any of the other media, or they could select multimedia that attracted their interest and attention along the way.

Videos that linked to the text, either side rail links or embedded text links, ran approximately one minute. A 30-second pre-roll ad played the first time a video was selected, but not every time a video was selected: Ads accompanied some videos, but not all. Each of the three multimedia links in the left side rail displayed images and video at a larger size than links embedded in the text. The design and functionality of each of the three viewers was different. When viewing story-related side rail videos readers could select unrelated videos by clicking links below the video being played. If viewers failed to click the back button a few seconds after viewing a side rail video, another video unrelated to the hockey story played automatically.

The full-length, three-part interactive video feature on Derek Boogaard (Figure 10) opened in a separate video viewer. Each of the three segments ran approximately 12-minutes and the entire three-part video ran nearly 37-minutes. As with the text narrative, viewers of the full-length video could access related videos and audio slide shows positioned at the bottom of the video feature as desired. Additional videos related to the full-length video feature had titles such as "Grooming an Enforcer," "Anatomy of a

Fight," "Blows to the Head," "Inside Boogaard's Brain," and "Boogaard's Appeal," among others.

When readers viewing the three-part video engaged additional media, the video feature paused automatically allowing them to return to the main video where they left off by clicking a link near the top left of the video viewer. Readers could choose to engage unrelated sports content or "click out" of the three-part video altogether and return to *The New York Times* home page or additional unrelated website information by selecting text links at the bottom of the video feature.

Slide shows were of three types: those that opened within the text and contained photographs with accompanying captions that readers clicked to advance, those that opened within the text and contained photographs with audio commentary that advanced automatically, and those that opened in a separate slide show viewer (Figure 11) that contained photographs readers clicked to advance. Slide shows contained as many as 14 photographs.

Clicking the "More photos" link beneath any one of eight photographs in the side rail on the opening page of part one—whether a photograph of Boogaard fighting on the ice, a photograph of a document, or a portrait of Boogaard's father or mother—linked readers to the same slide show of eight photographs depicting the town of Melfort where Boogaard spent his formative years (Figure 6). This was the only slide show that played in the slide show viewer, which included auto-play motion ads positioned next to the photographs in the lower right corner of the viewer. The slide show viewer ads changed automatically when a different photograph was selected. Readers had the option of selecting slide shows unrelated to *Punched Out*, just as they could select unrelated videos

in the video viewer.

Clicking a return arrow icon in the slide show viewer at the end of the slide show presentation returned readers to the initial photograph in the slide show. Readers could not return to the same place they were on the page they were reading before viewing the slide show. Readers had the option to return to either the opening screen of the part-one narrative, to a set of documents written by Boogaard, or to the three-part video presentation.

Punched Out's icon links were not always intuitive. Several small, embedded icons indicated the availability of photographs, videos, or documents. However, a video icon (instead of a camera icon) linked readers to an audio slide show and a camera icon (instead of a document icon) linked readers to a map.

***Snow Fall* Web page structure.** The appearance of a Web page on a computer screen largely depends upon how the content is structured and rendered by the Web browser being used. Modern browsers use multiple rendering modes (programs that determine how something appears on the computer screen) that are compatible with multiple browsers. *Snow Fall*'s developers employed code that kept the screen content proportionally the same size no matter how the window was resized. To ensure that the appearance of its pages was the same no matter what browser was being used, the specific software code used in *Snow Fall* instructed different Web browsers "to act in similar, consistent ways, overriding many, *but not all* [emphasis added], of the idiosyncratic...behaviors browser makers build into their products to accommodate pages that don't adhere to current standards" (Ellingwood, 2012, para. 1). [Although the screen descriptions provided in this analysis of *Snow Fall* apply generally to how most computer

Web browsers render its content, they do not necessarily apply to all Web browsers, particularly older Web browsers.]

All six chapters of *Snow Fall* were contained within a single Web presentation free from editorial content unrelated to the narrative. Individual "chapters" were linked and readers could scroll from the top to the bottom of each chapter. [As previously noted, this thesis defines a Web "page" as an individual section of content that can be accessed in a single scroll.] Readers could link to any of the chapters, to a map of the ski area, or to thumbnail portraits of each skier by selecting them from a menu at the top of each page. Other than four banner ads, none of *Snow Fall's* media was unrelated to the overall narrative.

Snow Fall employed a self-contained Web page design in which all additional media and links to story components were incorporated within the text at locations relevant to the narrative, and no additional unrelated links were made available (permitting readers to interrupt the narrative) other than four banner ads and discreet icon links to *The New York Times* home page, Facebook, Twitter, comment posts, and email at the top of each chapter page.

A horizontal image of a stark, snow-covered landscape filled the entire width and most of the depth of the opening chapter's screen, except for approximately 15% of white space below the image that was used for the caption. The image was an 11-second video loop of snow blowing across a barren landscape in nearly seamless repetition. The snow-covered slope and the area behind it were the same stark gray-white color, making the entire image mostly monotone in appearance (Figure 12).

As the page loaded on the screen the headline, subhead, and byline text faded in,

positioned in the top right of the image. The large black letters of the main headline ("Snow Fall") stood in sharp contrast to the medium-gray sky background. The words in the subhead ("The Avalanche at Tunnel Creek") were in smaller type and a slightly darker gray than the background of the snowscape image, which distinguished the subhead from both the image and from the black type of the main headline (Figure 12).

The authors' byline appeared in small uppercase type beneath the title, separated from the title by a short black line about two-thirds the length of the byline. A capital initial letter slightly larger than the size of the main headline's capital letters was paired with two lines of text in the white space below the image (Figure 12).

The opening sentence read: "The snow burst through the trees with no warning but a last-second whoosh of sound, a two story wall of white and Chris Rudolph's piercing cry: Avalanche! Elyse!" (Figure 12).

The text of the opening sentence was set in from the left edge of the frame and extended slightly past the midpoint of the image, leaving substantial white space to the right and keeping the sentence length at approximately two-thirds the width of the page (Figure 14).

Unlike *Punched Out* (Figure 4), links to the other chapters (labeled "parts" in *Punched Out*) were not immediately displayed horizontally at the top of *Snow Fall's* opening screen. Instead, only the newspaper's nameplate ("The New York Times") and four small icons linked to reader comments, Facebook, Twitter, and email locations were displayed on both sides of a small band of white space above the lead image (Figure 12). As readers scrolled down to read the text, new information appeared at the top of the opening screen: Text links to the presentation's chapters, to a map of the ski area, and to

thumbnail photographs of the group of skiers, appeared (faded in) in the center of the white space. At the same time, the first capital letter of the nameplate ("T") faded in replacing the words *"The New York Times"* and the title, *"Snow Fall"* appeared where the nameplate was located initially (Figure 13). This process was barely noticeable.

The New York Times nameplate title and the capital "T" that replaced it both linked to *The New York Times* home page. There was no other way to link to *The New York Times* newspaper content within the *Snow Fall* presentation other than clicking on one of these links at the top of the page. Unlike *Punched Out* there were no news section labels or tabs on *Snow Fall's* pages linking to unrelated content of any sort.

Snow Fall used parallax scrolling (kinetic Web coding) throughout the presentation, a scrolling method that creates a "curtain effect" in which one element raises or falls to cover another. As readers scroll down, the opening text rises to cover the opening image and the title/byline, which fade as the text rises leaving only the story's black text against a white background (Figure 13).

In addition to the chapter headlines *Snow Fall* employs topical headlines ("subheads") throughout to serve as story transitions and to help guide readers. As designed, the use of subheads also adds additional white space between sections (Figure 22).

As readers scrolled to the very bottom of each chapter, a full-screen-width white bar with text link/arrow icons appeared enabling readers to advance to the next chapter or return to a previous chapter without needing to scroll back to the top of the page. However, readers also could advance to the next chapter or return to a previous chapter by clicking on one of the chapter headlines across the top of the page (Figure 25).

Excluding the video loops at the beginning of four chapters and the 11-minute video at the end of the presentation, *Snow Fall* contains nine videos positioned within the text at points relevant to the story content (Figure 14). Each video functions as both a still image (positioned as a visual element within the text) and as a video (which plays within the text) connecting readers to the scene or to the subjects' personas. Most videos are less than a minute in length. All videos are accompanied by sound, either live on-location sound or subject interviews.

The first video still image was a tight portrait of Elyse Saugstad with an arrow "play" button in the lower left corner of the image. When selected the video played an interview of Saugstad describing how she felt when she was hit and buried by the avalanche.

Further down the page a full-screen width motion graphic video depicting the Stevens Pass ski area from an aerial perspective comes into place as readers scroll down the page. The *Snow Fall* journalists called aerial video motion graphics "fly-overs" because they had the appearance of flying in a helicopter over the landscape. As readers move down the page parallax scrolling darkens the white background behind the story's text to match the gray fog at the top of the video frame and the video motion graphic rises into position.

Reverse (white) type placed in still video frames also serve as subheads to connect the video to the text, sometimes using quotes from the narrative, such as "I couldn't breathe" in the video where Elyse Saugstad describes being buried by the avalanche. [The type in videos was removed in subsequent updates to *Snow Fall*.] Clicking on the still video image or on icons resembling video cameras embedded in the

text (identical to the text icons in *Punched Out*) enables readers to play the videos. The position of the in-text videos on the page does not change when played (i.e. it simply plays the video at the same size it is on the screen). Viewers can choose to play in-text videos at full-screen width by clicking a full-screen icon at the bottom of the playing videos. If the viewer chooses to watch a video at full-screen width the viewer must click out of the video when it ends to return to the text narrative.

A longer video feature, labeled a "documentary" that tells "the story in the words of the survivors," comes at the end of the written narrative. This video feature is nearly 11-minutes long and is preceded by a pre-roll video ad, the only pre-roll video ad in the entire presentation.

The widths of *Snow Fall's* still images vary within the text: smaller images are placed within the text, align with the right edge of the text, and are sized at approximately 33% of full-screen width (Figures 14, 16); medium-sized images are placed on the right within the text, extend into the white space at the edge of the screen, and vary between approximately 35% and 50% of full-screen width (Figure 19); larger images (slide show photographs) are centered within the screen and sized at approximately 60% of full-screen width (Figure 18). In several chapters multiple still images related to an individual or subject are grouped together on the page.

There are twenty-one slide shows in *Snow Fall*. However, sixteen slide shows are used as visual biographic introductions to each of the skiers, and seven of these are duplicated in the text where the descent of those skiers down the mountain is described. Five slide shows relate to other narrative descriptions in the text.

Slides shows contain as many as eight photographs and as few as one—one "slide

show" contains a single portrait. Slide shows contain on average four photographs and include scenes of family and backcountry skiing. Thumbnail portraits ("head shots") link to a biographical slide show of each skier. *The New York Times'* multimedia editor Jacky Myint called these thumbnail portraits "character cards" because they were intended to provide brief biographical information about individual skiers.

There are two ways of viewing a biographical slide show: clicking on a highlighted text icon of a skier's name within the narrative text, or clicking on a thumbnail portrait of one of the sixteen skiers positioned in white space to the right of the text narrative at a point where the individual in the portrait is first mentioned in the story (Figure 17). As previously indicated, seven of these character card slide shows repeat in the text where the skiers' descent down the mountain is described. It is only evident that thumbnail images link to a biographical slide show when a cursor moves over a skier's portrait or name within the text. Until then the photographs appear to be merely identifying images with captions of the subjects described in the text. Moving the cursor over a thumbnail portrait places a light gray highlight screen behind the image and its caption and causes the words "View slideshow" to appear within the screen.

The photographs in a biographical slide shows open at approximately 60% of full-page width. Photographs open on top of the text, which is faded light gray (Figure 18). To advance the slide show, readers either click an arrow that appears on the right as the cursor moves over the image or select one of several bullet icons beneath the image.

The second type of slide show (i.e. non-biographical) positions photographs in the text at approximately 60% of the page width. These function as both still images and (when clicked on) as multiple media presentations to provide additional information

(Figure 18). Small picture frame icons in the lower left corner of the photograph indicate that more photographs are available for viewing. When readers scroll across the picture frame icon the words "View slide show" appear. Clicking on the words or the initial photograph opens the first photograph in the slide show in the same way as the biographical slide show photographs (Figure 19). There are five of these slide shows.

Animation and motion graphics (Figures 15, 25) were used extensively throughout *Snow Fall* for various purposes: to show the path each of the skiers took down Cowboy Mountain as they are mentioned in the story; to help readers understand the location and typography in which the avalanche occurred; and to demonstrate how an avalanche forms, how an ABS airbag backpack is deployed in an avalanche, and how an avalanche occurs in real time. All motion graphics except for the depiction of how air bags are deployed were sized full-screen width. The animation and motion graphics activated automatically as readers scrolled down through the story: Parallax scrolling uncovers and then covers the motion graphics as readers continued to scroll down (Figure 16).

There were four embedded audio files of telephone calls made to the Sheriff Department dispatcher requesting aid for the avalanche victims, and one embedded audio file of a call made from the dispatcher to the Ski Patrol reporting the names of some of the victims. Readers accessed them by clicking on an arrow icon link positioned in the text at the point where the narrative described the calls. The time of the calls and the names of the individuals making the calls were listed below the arrow icons. The longest audio file was one minute and twenty seconds.

Snow Fall had relatively few ad positions in the text: one page had two ads, two

pages had one ad, and three pages had no ads. The ads were centered within full-page

width boxed banners with black backgrounds. The so-called "banner ads" were

positioned across the full width of the page away from any visual elements and, although

the banner ads interrupted the text, they were clearly labeled "Advertisement" in small

white letters at the top of the ad and easily identified as advertising (Figure 20). The ads

varied over time and could be targeted ads based on user Web activity and interest. When

an ad was not purchased for the available space the banner box remained in position but

empty except for the label "Advertisement," which was in reverse (white) type against

the black background. Some ads within the banner boxes employed motion videos that

played automatically for less than 10 seconds. Other ads, when selected, contained videos

that played for approximately three minutes.

Chapter 6
DISCUSSION

This case study is drawn from an analysis of the online presentation "Snow Fall: The Avalanche at Tunnel Creek" and from interviews with five *New York Times* journalists who were central to its creation. The analysis is organized around four questions: how do the syntactic, semiotic, and spatial relationships of different media forms help establish coherent and semiotically meaningful stories; how did *Snow Fall* project creators mitigate the disruptive effects of technology and interactivity on narrative coherence; to what degree did *Snow Fall* project creators purposely focus on the narrative experience in the design of the project; and how do organizational lines of authority, workflow structures, and journalistic routines and values affect the construction of multiple media narratives?

A basic function of narrative (fiction and non-fiction) is to generate an experience in the mind of readers through the selection and presentation of information. Narratives create an objective environment, a context, in which a subjective first-person reader experience occurs. This thesis applies a combined theoretical approach—framing theory, narratology/semiotics, and medium theory—to discover how the interconnections of multiple media elements (i.e. the patterns or juxtapositions) shape coherence and semiotic potential in a narrative environment.

Each of these theories influences signification differently: by how signs and their underlying codes come together (semiotics); by how semiotic modes are combined (narratology); by how information is selected and presented (framing theory); and by how technology shapes, influences, or interacts with our communication (medium theory).

A review of literature, participant interviews, and thematic analysis of the structure of *Snow Fall*—in contrast to *Punched Out*—indicate that nonfiction multiple media narratives achieve their greatest semiotic potential and coherence when syntactic, semantic, and presentation design principles blend with traditional and evolving online storytelling methods.

Relationships and Meaning

Traditional Web page structure exploits the Web's power of association and its ability to guide readers through content (Lynch & Horton, 2008) but does not prioritize storytelling over navigation. (RQ1): How do the syntactic, semiotic, and spatial relationships of different media forms help establish coherent and semiotically meaningful stories?

Punched Out's presentation design serves two functions: guiding readers through its narrative and helping readers navigate through additional website content by offering numerous links to comprehensive parenthetical information and other websites.

Like traditional news Web pages, the *Punched Out* narrative is positioned within a specific subsection of the website (the hockey page of the sports section) and provides options to engage additional content along the top, bottom, and sides of every Web page. This aligns with traditional news website navigation principles that indicate readers expect the most important elements to be found at the beginning of a Web page (the concept of "front loading") and internal navigation items to be found to the left of the primary content (Lynch & Horton, 2008).

Although *Punched Out's* main narrative and related elements are its most prominent feature and constitute most of the visible content on the screen, it is

surrounded with links to additional content and employs navigation links to make it easier for readers to explore the overall website and to engage content unrelated to the main narrative. This is more evident in the multi-page view (the majority of pages in the presentation) than the single page view (Figure 8).

Web links (visual signifiers or hyperlinks) connect readers to additional content by means of a tab, an icon, or a highlighted word on the screen. Web pages have two types of links: navigational links that connect to other pages within a website or locations within a section, and embedded links that connect to additional, parallel, or supplemental material within the content being read. *Punched Out* employs both types of links throughout its pages.

Notably, in addition to the main text narrative there is abundant unrelated content for readers to consider in *Punched Out* via Web links. Although these Web link options help readers to locate and choose other content, the associations these choices form can potentially damage the narratives' coherence and semiotic potential (Ryan, 2001).

Branch worried that when readers have too many options to engage multiple media they may never come back to the written narrative. Grueskin, Seave, and Graves (2011) agree there is value in such links. However, they also warn that links connect readers to other websites from which they may not return, which underscores Branch's concern.

"The space of the Web," Manovich concluded, "cannot be thought of as a coherent totality" (Manovich 2002, p. 257). Multiple media narrative elements on the Web join in specific sequences and spatial relationships within a field of meaning. Any disruption of the spatial relationships of a nonfiction narrative's elements potentially

disrupts the narrative's overall coherence. It matters to narrative meaning whether or not these relationships are established by the author or by the reader.

Punched Out's online structure includes sidebar links (often repeated from page to page) that permit readers to choose the order in which they engage additional media. These links don't always relate to the text being read and often contain a considerable amount of information. For example, the second embedded link in the *Punched Out* narrative is to 16 notebook pages of handwritten diary entries by Boogaard that were found in his apartment after his death. The supplemental information contained in the diary pages relates directly to the overall narrative, however it is exploratory in nature. Although the text narrative excerpts a few comments from the diary, the link enables readers to choose to read all 16 pages in either handwritten or typewritten form. Choosing to read all the pages takes readers out of the main story flow for an extended period of time, which is disruptive of overall narrative progression or story flow.

Manovich (2002) observed that a database is a collection of material that keeps changing, whereas a narrative is an organized pattern of consequential events that tells a story. A narrative requires the author to bring an "overall perspective" to the organization of the information so that certain elements have greater significance than others. In constructing multiple media narratives it is the responsibility of the authors to control not only the sequence of events, but also the sequence and the spatial positioning of media incorporated into the overall narrative.

Media shape our perceptions (McLuhan, 1962) and the choice of how and when to weave them into the fabric of a narrative have consequences for meaning and

comprehension. The incorporation of multiple media into written narrative affects "how the text signifies" (Hayles, 1997, p. 573).

Branch's criticism of *Punched Out* was that "when you went online to read it the margins were filled with things that readers could go explore," which countered the intent that "every element beyond the words...add something to the story and keep the reader engaged" (personal communication, January 30, 2014). This perspective aligns with Ryan's research that engaging content unrelated to the written text or content that interferes with the text's narrative progression introduces an element of randomness— "the deathbed of narrative coherence" (2004, p. 4).

But even content related to the main narrative can occupy reader attention for extended periods and potentially interrupt narrative progression. As previously indicated, embedded text links are designed to enable readers to view multimedia elements where they align with the narrative. However, several *Punched Out* multimedia side rail links can be selected at any point within a section. For example, a multimedia link to a fight between Boogaard and hockey player Mat Sommerfield appears in the left side rail on each of the seven pages in first part of the presentation. The mention of the fight in the text, however, appears only on page six. Viewing the video of the fight several pages prior to reading the description of the fight in the text is potentially confusing, an observation also supported by Ryan's research (2004) that indicates when narratives fail to establish logical semantic relationships between multiple media modes it disrupts narrative coherence.

Syntagmatic differences concern positioning. In page design as in grammar, altering the position or structure of elements alters meaning. When authors place

multimedia links in a side rail and allow readers to choose when to view them they pass

the responsibility of determining the narrative path on to the reader. Media formats that

permit different structures and reader interpretations discount the author's intended

meaning (Ryan, 2004).

As previously detailed by Nerone and Barnhurst (2001), when readers have

multiple options to randomly explore unrelated, uninformative, or irrelevant content it

diverts attention from the narrative storyline and takes readers out of the flow of the

narrative. This also supports the idea that the more readers are able to engage

supplemental content the more they are able to influence narrative progression.

In the context of medium theory, technology influences how multiple media

content is presented, experienced, and acquires meaning—"the modes of perception and

the matrix of assumptions" (McLuhan & Zongrone, 1995). Although the medium used to

communicate a message affects both its presentation and meaning, the medium should

not interfere with a reader's ability to be absorbed in the message (Leckner, 2012).

However, that is not always the case.

Well-constructed narratives in any format emphasize the storyline and try to

eliminate or minimize unnecessary elements that may alter the intended meaning. Sports

editor Stallman observed that everything should "feel necessary and crucial" to the

overall narrative presentation (personal communication, March 5, 2014).

If meaning making takes place in the minds of individuals when they connect the

signifier (form) with the signified (concept), allowing readers to choose to engage or not

engage media that may be an integral part of the overall narrative likely enables them to

determine (or at least strongly influence) the structural relationship of the narrative (the signifiers used and the context in which they are used) and ultimately affect its meaning.

For example, there are semantic consequences for beginning a narrative with a video, or slide show, or graphic rather than a text. *Punched Out* readers are offered the option to link to a three-part, nearly 37-minute video presentation of Boogaard's story before reading the text. Providing readers with an opportunity to view a 37-minute video before they even begin reading the story doesn't simply enable them to view the story in another format, it makes it possible (likely?) for them to skip the multimedia narrative altogether.

Because the medium used to tell a story in part determines how a narrative is shaped in the minds of both the authors and the readers (McLuhan, 1962; Manovich, 2002; Feenberg, 2003; Ryan, 2003; Jenkins, 2008), it could be argued that providing readers with an opportunity to view the three-part interactive video before reading the *Punched Out* text diverts reader attention from the written narrative and affects how it is understood. It could also be argued that viewing a narrative in one medium and then reading it in another medium affects the meaning of each, just as watching a movie after reading the book on which the movie is based affects how the movie is understood and vice versa. This isn't to say that such an approach is "wrong," simply that it provides more options to deviate from both the intended meaning of the author and the interpreted meaning of the reader. In some ways it is like reading CliffsNotes before reading or watching a Shakespearian play: It foregrounds aspects of the narrative, offering impressions and ideas about the text before readers have an opportunity to form ideas of

their own or to consider the author's intent. Rose concluded that links could change our relationship with information and "destroy hierarchies" (2012, p.111).

Nevertheless, even when authors maintain control over the structural relationship of the narrative, poor design decisions can damage narrative coherence. For example, the positioning of multiple media within a presentation can interfere with reader understanding. Semiology demonstrates that it is the arrangement of elements ("the parts") as interrelated structures that creates meaning (Saussure, 1983, Jewitt, 2012). In each of four consecutive sentences on page three in part three of *Punched Out*, an embedded link connects to videos that run from eighty seconds to over two minutes. One of the four videos contains a pre-roll video ad. It takes more than five minutes to view all the videos. A written narrative with video links in four consecutive sentences is unlikely to result in a coherent narrative when readers select all the links.

The ability to search through stores of data is likely the Webs most powerful function (Manovich, 2002; Schoenbach, de Waal, & Lauf, 2005). But this power to choose also can lead to complications. Links offer readers options and choices in an online setting that are not available in print environments. If it is the responsibility of the author "to control the semantics of the elements and the logic of their connection so that the resulting object will meet the criteria of narrative" (Manovich, 2002, p. 228), the prevalence of the previously mentioned patterns could indicate that *Punched Out's* authors failed to meet that responsibility.

The spatial positioning of multimedia within long-form narrative is as essential for narrative progression as the spatial positioning of sentences is to narrative progression. Positioning elements within a text sequentially, whether written, visual, or graphic, is a

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syntagmatic process that joins them in a coherent whole and gives them relevance in relation to one another. When authors place multimedia links containing video, audio, documents, and other interactive elements in a side rail and allow readers to choose when to view them, they pass the responsibility of determining a narrative's sequential path on to the reader and discount the (author's) intended path.

A coherent story guides or directs readers through the narrative, providing details that lead them to follow a logical progression or to anticipate a certain conclusion. In the traditional sense, what makes narratives coherent is that their semantic and syntactic details are orderly, relevant to the intended message, and consistent with the narrative storyline.

Not all links or interactivity disrupts narrative progression or coherence. It is the seamless integration of elements within the overall narrative that prevents them from interfering with narrative coherence and meaning, as *Snow Fall's* journalists realized in choosing to keep the story moving forward without hindrance from other media by making "one [medium] flow into the other [and] into the other so it just feels like one long experience" (C. Spangler, personal communication, March 3, 2014).

Snow Fall visual links ("still" video frames and still photographs) serve multiple purposes, yet they integrate with the narrative's overall structure. Still images enlarge when selected and sometimes link to slide show presentations. And videos that are clearly identifiable as videos (via an icon in the corner of the frame) can be viewed both as standalone still images and as multimedia when selected.

Incorporating these visuals (still or video) into the narrative where they connect with the written narrative rather than stacked in a side rail makes them part of the logical

narrative progression regardless of the form in which the reader chooses to view them. Although from Manovich's perspective giving readers the option to view still images as multimedia or to view multimedia (i.e. video) as still images is a failure "to control the semantics of the elements," it is *not* a failure to control "the logic of their connection" or to "meet the criteria of narrative" as long as they are logically structured into the narrative storyline, which, as noted, was the intent of *Snow Fall* journalists.

Snow Fall authors presented a single narrative in which the multimedia flowed naturally out of the reading experience both sequentially and spatially. Well-constructed narratives in any format emphasize the storyline and try to eliminate or minimize unnecessary elements that may alter the intended meaning. As Norman observed, if authors do not organize their material they "pass the burden on to the reader, who may not be able to cope, or may not care to" (1988, p. 213).

A narrative is an organized pattern of consequential events that tells a story, which is why coherent narratives require logical and orderly constructions, especially factual stories told from a particular point of view. It is the point of view, which occurs through the selection and ordering of the narrative elements, that gives the story meaning.

The author's/designer's/sign-maker's responsibility is to control not only the sequence of events, but also the sequence of media incorporated into the overall narrative. The placement of different media within a narrative structure is both syntagmatic and paradigmatic. Multiple media elements join together sequentially in a succession of interlocking elements to form coherent structures and at the same time substitute certain syntactic elements for others (e.g. video for text).

Structure is a carrier of meaning, and the spatial positioning of elements is part of a narrative's structure. The visual elements placed at the beginning of each *Snow Fall* chapter and the size (salience) given to them sets both the scene for the narrative as well as the tone: They are both a depiction of the landscape in which the story occurs and a referent of the overall mood the author tried to create.

Punched Out places a 37-minute video at the beginning of the written narrative and provides links to it throughout the presentation. *Snow Fall* places an 11-minute video at the end of the presentation and does not include any links or references to it. *Punched Out* includes extensive multiple media—multiple videos, pages of supplemental documents, and links to both related and unrelated information—much of which can be accessed at any point in the main narrative. *Snow Fall* not only limits the amount of multiple media it includes, but also positions it where it integrates with the overall narrative and limits how readers can interact with it.

When the authors/designers of long-form multiple media narratives empower readers to select and order narrative elements (a process that influences how narratives signify) the reader assumes the role of sign-maker and can affect both the narrative's coherence and semiotic potential.

Snow Fall strictly controls the selection, combination, and placement of multiple media elements in order to control spatial relationships, narrative progression, and influence how the narrative emerges in readers' minds within the limitations of cultural and social mores and cognitive interpretation. When multiple media elements are indeterminate jigsaw puzzle pieces that don't fit together easily, as they are at times in *Punched Out*, they fail as narrative constructions.

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Designing for the Reader

Good communication design attempts to eliminate distractions ("noise") and emphasize information that is relevant and important in an aesthetically pleasing manner (Lynch & Horton, 2008). (RQ2): How did the *Snow Fall* project creators mitigate the disruptive effects of technology and interactivity on narrative coherence?

Any grammatical system requires an understanding of semiotics and how to integrate different kinds of signs into a coherent message. From a semiotic perspective visual elements are ordered structurally just as language is ordered grammatically (Smock, 2004) and design, therefore, can be thought of as a structural/grammatical communication system that organizes form and content to make its message clear and understandable.

If a narrative is a series of connected events (Manovich, 2007), it follows that how the events are connected or designed will determine their significance (i.e. their meaning). One difference between *Snow Fall* and *Punched Out*, Branch explained, was that *Punched Out* was a three-part series with more than twenty pages and extensive multimedia, and it "was a lot to ask of readers" to click through all those pages and "to keep their attention and trust that they're going to say, 'Yeah, I'd like to keep going with this one, let me click here.'" *Punched Out* "was loaded with things" (personal communication, January 30, 2014).

Conversely, *Snow Fall* was published a year after *Punched Out* and according to Branch "it swung the pendulum very hard to the other side." The *Snow Fall* design "controlled the way the reader experienced the story...as opposed to giving them a lot of options" like those in *Punched Out* (personal communication, January 30, 2014).

Research suggests any information that interferes with reader attention or narrative progression interferes with reader understanding (Gauntlett, 2000; Nerone & Barnhurst, 2001; Slater & Rouner, 2002; Knox, 2007). Branch and others noted in their interviews that in order to keep readers engaged with the overall narrative experience it is necessary that they be caught up in the "flow" of the story.

The technology of computer interfaces and the design of Web pages largely shape the online "experience" readers have with multiple media narratives. According to narratological principles, how narratives are structured or designed influences their ability to tell a story (Jahn, 2005). Media technology not only affects the look and feel of online narratives, but also how they signify (Chandler, 2007).

Snow Fall demonstrates how digital technology can be used as "a modality of production" (Hayles, 1997) to enhance the experience of readers of nonfiction storytelling online. The opening display is a horizontal image of a barren, windswept, snow-covered landscape that fills most of the screen except for a band of white space below the image containing the opening sentence. The image is actually an 11-second video loop of snow blowing across the landscape and creates the effect of both a still photograph and a video simultaneously. The snow-covered slope and the area behind it are the same stark gray-white tone, making the entire image monotone in appearance.

To the right of the image the main title, "Snow Fall," slowly fades-in near the top center of the image in large black letters. The subtitle, "The Avalanche at Tunnel Creek," appears immediately below the main title in smaller letters and is toned dark gray, which separates the type from both the background and the main title. The authors' byline appears in even smaller upper case type beneath the title, separated by a black line. The

type seems to float unobtrusively within the image, with the words "Snow Fall" standing out in relief against the pale gray-white background. The visual balance is such that the weight of the headline does not overpower the weight of the image. The minimalist treatment of the image and type has the appearance of an elegantly designed art book cover.

Several seconds after the snowscape image appears on the screen, the opening sentence gradually rises in position at the bottom portion of the image. The single sentence is dramatic and serves the same purpose as a teaser or "hook" to capture reader attention: "The snow burst through the trees with no warning but a last-second whoosh of sound, a two story wall of white and Chris Rudolph's piercing cry: 'Avalanche! Elyse!'"

The silent, moving image of a gray, snow-covered landscape, and the gradual fade-in of the title and byline, combines to convey a feeling of emptiness and foreboding. The overall effect is cinematic, as if watching the opening scene of a motion picture (Figure 12). Interestingly, the entire process is pre-determined by the designer. Readers have no involvement in any of the actions that create the dramatic effect.

Snow Fall provides readers with a reading "experience," which Grueskin, Seave, & Graves (2010) said new media is rarely able to provide, and achieves what *Snow Fall* authors intended it to achieve: namely, what Branch described as, "the immersive experience of being there" (personal communication, January 30, 2014).

But digital technology and interactivity alone do not guarantee reader involvement in online narrative. By its very definition interactivity has substantial power to distract from and interfere with narrative coherence, since it involves clicking, dragging, tapping, pinching, collapsing, sizing, selecting, pressing, linking, scrolling, and

other activities that require reader attention to Web navigation tasks rather than narrative focus. Rather than feeling immersed in the experience, readers who lack the skills or patience to navigate multiple media narratives may feel as if they are drowning in a sea of technological activity on every page. As Ryan (2004) observed, interactivity "de-emphasizes the narrative" and affects how readers come to understand it.

Research indicates that new technology is disruptive and not always beneficial (Kahn, 2011). Perhaps what is most problematic about new technology is its newness: It takes time to absorb the changes brought about by new technology (McLuhan, 1962) and the pace of technological change makes it difficult to understand how things work and what the rules are (De Zengotita, 2005, Carr, 2008).

As observed previously (Rice, 1999), the "how things work" aspect of Web interactivity can cause problems for reader attention and narrative coherence. That is one reason videographer Spangler said the group wanted to avoid "interrupters"— meaning multimedia that interrupted the overall narrative—by removing "the last barrier of a 'click'" so that reader interaction would not be necessary to engage certain motion graphics and videos (personal communication, March 3, 2014). The multimedia, in other words, opens automatically without reader interaction, as if woven into the fabric of the narrative.

As previously mentioned, *Snow Fall's* authors intentionally limited the amount of interactivity to keep readers from compromising the intended structure of the narrative. On the one hand, Spangler noted, readers "were forced into experiencing this new piece of media," and on the other hand readers were forced to follow the narrative progression as intended by the authors so that the narrative "flow" was not interrupted (personal

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communication, March 3, 2014).

Nevertheless, *Snow Fall's* online readers can make choices that affect the narrative path. Unlike *Punched Out*, however, such choices are limited in *Snow Fall* and the available choices do not conflict with the authors' narrative intentions. For example, as Branch noted, *Snow Fall* videos and slide shows are discretionary and although readers can choose to view them or ignore them, their purpose is "to help further the story" and "to engage the reader" (personal communication, January 30, 2014).

Both the videos and the slide shows are tightly edited. The time length of the videos and the number of photographs in the slide shows are limited in keeping with the intent of the authors not to distract from the main narrative, which, as Spangler indicated, should provide "the facts, the chronology, and plot points" while the visuals provide an emotional and complementary experience at an appropriate location within the text (personal communication, March 3, 2014).

Online technology is as much a determinant of nonfiction narrative meaning as the author's intention and the reader's interpretation (Tabbi, 2010). Web interface technology makes readers active participants in the "reading" process. As previously noted, online technology that is complicated, cumbersome, and doesn't work as expected can frustrate readers (Norman, 1988; Schoenbach, de Waal, & Lauf, 2005).

Although Skjulstad's (2007) argument may prove to be true (i.e. that readers will be better able to adapt to interactivity over time as readers adjust to the browsing experience and online navigation becomes second nature), the burden of adjustment is not the reader's alone. *Snow Fall* shows that Web page designers can help readers adjust by making the interactive reading experience less frustrating and confusing and more

natural and intuitive. Although technology has always shaped communication, concern for the effects of technology have always shaped how it evolves. If "how we do things determines who we are" (Feenberg, 1999, p. 95) then, as McLuhan noted (1964), control over technological innovation and implementation is essential.

It is the job of the storyteller to make the narrative experience engaging. Simply telling a story will not make it memorable. It must convey a picture in the reader's mind. It must show as well as tell. The visual/spatial presentation of a narrative then, in words, images, and design, has a significant effect on its semiotic potential. In multiple media narratives it is important not just to determine where multiple media will be placed on the page or how it will look on the page, but also how the placement of that information will likely affect the user reading experience.

One of the criticisms of *Snow Fall* was that the technological aspects of its presentation, including its scrolling technique and motion graphics, drew reader attention away from the overall narrative. *Snow Fall* differs from *Punched Out* in that it uses motion graphics and parallax scrolling functionality. Both technologies contribute to the "wow" factor that *Snow Fall* engendered. As described previously, parallax scrolling is a kinetic scrolling method in which one page element changes position in relation to another, giving the impression of a curtain rising to cover other elements. Motion graphics is a digital technique that combines graphics with images, video, and sound to create the illusion of movement within a scene, often in a way that helps tell a story.

These two digital technologies can disrupt a narrative's path because of their eye-catching appeal—it is difficult not to notice their effect while reading online. Nevertheless, aside from their power to attract attention, it is their ability to help tell the

story and to draw readers into the story that benefit the overall narrative in *Snow Fall*. Rather than "interrupters," the motion graphics are used to advance the narrative and parallax scrolling is used as an organizing guide.

Some critics consider parallax scrolling simply a design embellishment made possible by technology, with no real value to the overall presentation other than to indulge designers' creativity (Manjoo, 2013). However, as McLuhan concluded, technology extends our senses, providing a "technological simulation of our consciousness" (1964, p. 3). In this sense, parallax scrolling does have effects that support the creation of narrative meaning. To a certain extent it creates suspense, in that it seems to gradually "reveal" the content as readers scroll down the page rather than simply display the content on the page. Its use in *Snow Fall* seems particularly relevant because in scrolling, the *snow*-white background seems to flow over the text, images, and graphics, covering them as readers move down the page. Branch noted that although there was no intent to mimic the motion of an avalanche, parallax scrolling did create a mood, one of moving "down and down and down" that "just sort of felt right" (personal communication, January 30, 2014). This notion is supported by McLuhan's idea that in matters of media technology "the individual is almost inevitably unaware of their effects" (McLuhan, 1964, p. 318).

Stallman said that using parallax scrolling in *Snow Fall* "enhanced that experience" of downward movement and allowed the readers to go through [the presentation] in a more engaging way, a more gripping way." However, he equivocated that it was "open for debate" as to whether parallax scrolling was generally effective. "I would say nine out of ten pieces online that use [parallax scrolling] either don't need it,

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or it's clumsy, or it's ineffective" (personal communication, March 5, 2014).

One of the more compelling motion graphics in *Snow Fall* is a map of the backside of Cowboy Mountain that depicts the path of the avalanche in real time as it moves down the mountain, through the trees, and ends in a meadow. As the depiction of the avalanche progresses it is accompanied with a clicking sound that changes in frequency to indicate the changing speed (also noted in numerals) of the front edge of the avalanche. Branch said the motion graphics are a different experience than a two-dimensional graphic found in newspapers and give readers the effect of "being there," which is unachievable in print.

Snow Fall's use of parallax scrolling, motion graphics, and video loop images underscores Rawsthom's (2008) concern that the connection between sophisticated Web technology and the construction of multiple media narratives is becoming increasingly complex. Consequently, as online functionality becomes more complex Web navigation becomes increasingly important (Horton, 2006).

Strictly speaking a linear narrative is chronological: It arranges events in sequence. Even though events are not chronological in nonlinear structured narratives, such as many multimedia narratives, they still connect what came before and what came after (i.e. cause and effect). In either case, however, the more readers alter or suspend their engagement with the main narrative the more likely it is they will not make the connections essential for narrative coherence and meaning. Branch noted, for example, that lengthy video can disconnect readers from the overall narrative and once that happens storytellers may not be able to get them back (personal communication, January 30, 2014).

Links in long-form multiple media narrative presentations provide promotional and advertising opportunities for publishers, but how advertising content is presented on Web pages also has consequences for the attention narrative content receives and for its coherence and meaning.

All advertising is disruptive. It is designed to attract the attention of the audience. The Web's ability to predetermine when, how, and for how long ads appear within written or visual content, however, is different from how advertising functions in print media. Web advertising that may require some type of action to be taken by the reader, or ads that play automatically such as video and motion ads, are a relatively new experience for online readers.

By intent, there are few ads in *Snow Fall* and those included are not prominent. There is only one video ad—a pre-roll ad with the video at the end of the presentation— and only four banner advertisements used across four of six *Snow Fall* pages. These ads are positioned within the text away from visual elements. Although the ads run across the width of the page and divide the text, they are easily distinguished from the journalistic content and can be skipped over without causing a significant interruption of the narrative flow (figure 20). Some ads include brief motion graphics; most do not. When an ad is not sold the banner box remains on the page but is empty except for the word "Advertisement" in small reverse type (white type against a black background) positioned at the top center of the banner.

Punched Out ads vary in the manner and degree of reader distraction. For example, its pre-roll video ads distract attention because they play automatically before the narrative-related video is viewed. On average these ads run from under 30 seconds

(embedded video) to over a minute (side rail video), but readers must take an action (i.e.

click) to skip the ads after 5 to 15 seconds. These ads require attention to their content but

disrupt attention from the narrative content.

Its post-roll video ads can be disruptive because they play automatically when

readers do not take an action to return to the main narrative within 2 to 5 seconds after

viewing the narrative-related video.

Its auto-play motion ads in the slide show viewer are positioned to the right of the

photographs and do not open on the screen in a way that prevents the photographs from

being viewed. Nevertheless, the close proximity of brightly colored ads to the

photographs, the automatic replacement of an ad after viewing each photograph, and the

numerous motion ads and video ads that play automatically in the ads, can be distracting

to reader attention.

Finally, its boxed display ads, although generally brightly colored, are the least

distracting ads because they are small and lack salience (1/10th screen width), ruled off

from the main narrative, and unobtrusively positioned to the right of the text. *Punched

Out* contains two boxed display ads in the same position on every page.

Framing theory indicates that the presentation of information directs reader

attention (Entman, 1993; University of Twente, 2010). Other studies indicate that

increasing online advertising's intrusiveness increases a reader's purchase intent by

directing a reader's attention away from editorial content and toward advertising content

(Nielson, 2007; Goldfarb & Tucker, 2010). Making intrusive advertising information

available to readers as they read editorial content on the Web is not a practice designed to

capture and keep reader attention focused on the narrative, particularly due to the fluid nature of online advertising.

Although it may be appropriate for news websites to provide readers with access to as much content as it can make available without concern for focusing reader attention and concentration, it is inappropriate for long-form narrative presentations. Adding multimedia that doesn't contribute to the advancement of the narrative flow or that deviates from the narrative path can be a detriment to digital storytelling. Research indicates online communication technology can reduce audience interaction and consequently limit audience understanding (Barnhurst & Nerone, 2001; Todorov, Chaiken & Henderson, 2002). Placing long-form multiple media narratives in a Web structure that emphasizes website navigation prioritizes search and exploration over narrative engagement. When a Web presentation positions ads and other unrelated content to attract, engage, and hold reader attention, or when it encourages readers to click links that take them away from the main narrative, to engage supplemental material for a considerable period of time, or to view related content at points in the text unrelated to that content, it causes a shift in attention away from the main narrative (Lynch & Horton, 2008; Carrasco, 2011). Reader absorption has a direct connection to the persuasive impact of narratives (Slater and Rouner 2002).

Snow Fall readers are able to advance through the presentation in a linear manner unimpeded by enticements to engage unrelated content. *Punched Out*, however, is not structured to keep reader attention focused on narrative progression.

Despite the sophistication of its technology (parallax scrolling, motion graphics, and interactive elements) *Snow Fall* uses many of the same fixed page design principles

found in print design to create relationships between its constituent parts and to attract and hold reader attention. For example, visual elements are positioned within the text where they connect with the narrative (Figures 12 and 17); bold typography is used as a design element and to guide readers to content (Figures 10 and 12); visually strong images are given size and prominence on the page (Figure 10), smaller images are paired with larger images to provide contrast (Figures 19, and 20); images are positioned to take advantage of their internal directional movement (Figures 10 and 12); graphic lines are formed and maintained and used to connect elements (Figures 19 and 20); and "white space" is used as a canvas (Figures 19 and 20) on which to create relationships, emphasis, and a consistent overall appearance (Hurley & McDougall, 1971; Hurlburt, 1977; Williams, 1994; Harrower, 1995; Lynch & Horton, 2008).

There is a flow to information in the perceptual process and any interruption of that flow interferes with the signification process through which meaning is achieved (Barry, 1997). When people have too many options to consider when navigating Web content they may avoid putting forth the mental effort required to make sense of the communication and settle on the "merely satisfactory" rather than the "optimal" choice (Iyengar & Lepper, 2000; Rice, 1999). Effective Web page design organizes multiple media nonfiction narrative forms into coherent patterns of meaning, treating each form as an equal "semiotic" partner, recognizing how to use each to best advantage in the construction of narrative. *Snow Fall* Web page design does that.

The Narrative Experience in Design

The previous examples suggest that to ensure readers follow the narrative sequence intended by the authors, Web page design must control how readers progress

through the narrative rather than allowing readers to control that progress. (RQ3): To what degree did *Snow Fall* project creators purposely focus on the narrative experience in the design of the project?

Branch and his colleagues all agreed that it is necessary to control the reader experience to keep readers engaged in the narrative presentation. *Snow Fall* presentation design controls the readers' narrative path by making the overall narrative progression (or "flow") its primary focus: It limits the amount of multimedia content, eliminates unrelated or distracting multiple media elements not in accord with narrative progression, positions elements within the text where relevant, and limits the amount of control readers have over what content they can engage and when they can engage it.

Snow Fall is a self-contained Web presentation, an independent unit that all but eliminates unrelated story content. No unrelated links are available for readers other than four banner ads spread among six chapters and five discreet icon links to *The New York Times* home page, Facebook, Twitter, comment posts, and email. These icon links are isolated from the narrative space within a thin rail at the top of each chapter page. Story-related media and links to story components are incorporated within the text at locations relevant to the narrative.

There are no sidebar links or links of any type surrounding *Snow Fall* text. All links are embedded within the text where they relate to the narrative and not stacked close together within the same paragraph. Visual elements are positioned within the text and displayed at a larger size than would be possible if positioned close together in a side rail, as they are in *Punched Out*. This gives designers an opportunity to use visuals as storytelling elements, giving them importance within the narrative, and makes it easier

for readers to actually "read" them and appreciate their meaning.

Snow Fall visual links ("still" video frames and still photographs) serve multiple purposes. Still images sometimes link to a slide show, and even though videos are clearly identifiable as videos (via an icon in the corner of the frame) they can be viewed both as standalone images and as multimedia.

It is difficult for readers not to notice (i.e. "read") these images because they are placed within the text and given salience by their size. However, the presentation is not designed so the slides shows open or the videos play automatically; readers must select them. Simply viewing the photographs or still video frames while reading the text provides visual details relevant to the narrative. Clicking on the link to view the multimedia (slide show or video) not only provides more information, it changes the reading experience according to how the information is framed by the media selected (Entman, 1993; Hall, 1997c; Chandler, 2007; Kress, 2010). This is particularly evident in regards to video.

Although *Snow Fall* videos are designed to run about a minute or less to keep reader focus on the overall narrative (J. Branch, personal communication, January 30, 2014), they provide considerably more salience and information value than either the still images or the slide shows because of the immediacy of their format and the emotional force of their content. For example, Branch acknowledged that viewing the moment when skiers realize their friends have been buried in snow, or hearing the skiers talk about the experience and how it affected them, connects readers to the story emotionally in a way still images and words simply can't. He considered video to be the best way "to help the reader understand the emotional toll of what happened that day" and admitted it is

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"something they're not going to get from me as a writer" (personal communication, January 30, 2014). Branch also noted that the motion graphics described the science of avalanches and other complicated details better and more succinctly than he could have done with words and gave him space to concentrate on narrative development.

Branch's conclusion that "The world is changing, and the majority of people now expect to see what they're being told" (personal communication, January 30, 2014) is supported by Campbell's (2013) position that presenting a story in video form offers a number of advantages over traditional visual forms by giving subjects a "voice" and providing readers with a greater [narrative] context. Both the content of visuals and their location within the overall narrative gives them significance.

Images contextualize words as much as words contextualize images. Being able to give "voice" to subjects is sometimes better achieved through images rather than words, although as previously noted showing (visual) and telling (written) can easily switch from one point of view to another (Cobley 2001).

Incorporating these visuals into the narrative where they connect with the written narrative rather than stacked in a side rail makes them part of the logical narrative progression, regardless of the form in which the reader chooses to view them. Neither choice interferes with the presentation's narrative path.

DeVigal's idea of multiple media that "enhances the package in non-linear layers" supports this view, as does Barthes' conception of "satellites" that embellish the plot but can be eliminated without destroying the narrative logic. The motion graphics, on the other hand, are outside of reader control, acting like Barthes' "kernels," part of the narrative logic that helps to establish the story's coherence.

Journalists are looking for new ways to tell stories and digital media are part of narrative's future development. But the old ways are not broken. Digital stories use many of the same devices and techniques traditional stories use to attract reader interest and advance the narrative. Like traditional stories, it is important that the media employed in the construction of multiple media storytelling integrate with the other narrative elements seamlessly, logically, and without distractions, and that they provide readers with a cohesive reading experience.

Often when readers select a link to other media they have no clear understanding of how much information it contains, how long it will take them to read or view it, or how relevant it will be to the narrative they are reading. Although multiple media can support overall narrative progression, it also can be too much of a good thing, particularly when it distracts readers or fails to reinforce the narrative message (Lynch & Horton, 2008).

Although *Snow Fall* also has a longer video feature presentation, it is shorter than the 37-minute video in *Punched Out* (by about 26-minutes) and is preceded by the only pre-roll ad in the entire *Snow Fall* presentation. Unlike *Punched Out*, which places the video feature at the beginning of the text and provides links to it on every page, the *Snow Fall* video feature is only available at the end of the presentation and there are no links to it within the presentation. Placing the documentary video feature at the end rather than the beginning prioritizes the written narrative and deemphasizes the video, making it likely readers will not watch the video before reading the story.

Although exploration does not necessarily alter narrative sequence, it invariably interrupts narrative sequence and affects how the narrative emerges in the mind (Ryan,

2004, p. 342). The intent of *Snow Fall* authors was to present a single narrative in which the multimedia flowed naturally out of the reading experience (B. Lebowitz Hanger personal communication, March 6, 2014). By limiting the opportunities available to readers to explore additional information in more depth and restricting the amount of information those opportunities provide, *Snow Fall* authors made it more likely that reader attention would stay focused on the narrative experience.

Multiple media narratives must establish logical syntactical, semantic, and spatial relationships among communication modes in order to form coherent and semiotically meaningful stories. Associations form when multiple media are joined in a coherent narrative configuration. Just as narratives form associations in readers' minds, readers form associations and shape narrative meaning through their interpretations and understandings of events, which in turn are influenced by cultural and social codes. It is important that authors control how the narrative initially emerges in the readers mind so its intended meaning can be understood or at least communicated. *Snow Fall* shows that this is best accomplished by the coherent arrangement of the parts of the narrative through control of the selection, emphasis, sequence, and structure given to both the events and to the media included in the narrative, and by control of the reader's path through the narrative.

When the authors/designers of long-form multiple media narratives fail to provide a predetermined narrative path for their readers, or fail to keep their readers on a predetermined path because of how they construct their presentations, they give readers the power to influence the process by which the narratives signify meaning. In a fictional environment or a game world such an approach could be considered artistic license. In

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the world of nonfiction journalism, however, it could be considered a distortion of meaning—or at least, meaning as constructed by the author.

Writer Doris Lessing noted, "A story is how we construct our experiences [and] the template of our stories–a beginning, middle, and end...is the structure of our minds" ("Doris Lessing," n.d.). Still, there are concerns in applying the principles of traditional narrative construction to all evolving narrative forms. Bordwell (2007) points out that although there are commonalities among narrative traditions, there is also a risk in assuming the commonalities apply "universally, to all stories in all media" (Bordwell, 2007, p. 51).

> We may...miss the fact that narratives, created by people for other people, need not be built out of principles that are logically consistent. The promiscuity of narrative construction reflects the quick and dirty reasoning characteristic of minds attuned to social, not ontological, meanings. (p. 51)

Nevertheless, while not all narratives are linear or logical, or need be, the rules that apply to nonfiction narratives imply a logical consistency. It is inescapable that there is a basic structure within all narrative forms. Structure is a carrier of meaning, which is why coherent narratives require logical and orderly constructions—especially nonfiction narratives.

Snow Fall and *Punched Out* illustrate the difference between a presentation that tightly controls the configuration of multimedia narrative elements and a presentation that permits a certain degree of reader control over that process. It seems evident from an analysis of the two presentations that when a multiple media interactive narrative

develops coherence and achieves its semiotic potential it does so by working with its medium, not against it.

Journalism Values, Cooperation, and Narrative Construction

Newsroom convergence implies cooperation among journalists with different media skills and layers of responsibility. As previously noted, that process has not always been smooth across many news organizations and has generated conflict over the editorial and organizational values of advertisers, news managers, and journalists. (RQ4): How do organizational lines of authority, workflow structures, and journalistic routines and values affect the construction of *Snow Fall*?

The rapid and pervasive onset of digital technology altered long-standing journalistic routines and responsibilities. Lines of authority that were once clear became indistinct, particularly with the development of online news websites, which sometimes led to distrust between journalists and their managers (Ryfe, 2009).

Knowledge is power, and as news organizations transitioned from print to the Web many newsroom journalists failed to develop the technical skills needed to function in an online environment, compromising their authority over content and journalism practices. In addition, workflows and editing practices used on the print side didn't always carry over online and new online workflows didn't always establish hierarchies of responsibility and authority over content and production.

Snow Fall was a project that happened at the right time. Prior to the project's start *The New York Tim*es undertook a redesign of their website and changed the organizational structure of the Web operation. Joe Sexton, sports editor at the time the *Snow Fall* project began, saw the potential in *Snow Fall* and pushed to "blow it out big"

(C. Spangler, personal communication, March 3, 2014). Andrew DeVigal, who was in charge of the multimedia department, and graphics director Steve Duenes arranged meetings, oversaw the production of graphics, coding, and design, and pushed to "make it different" (B. L. Hanger, personal communication, March 6, 2014).

Times reporter John Branch praised the contributions of each individual on the project and credited the willingness of those in the group to make compromises as largely responsible for its overall success. However, most of the interview participants initially had concerns about the project: about their responsibilities, about exactly who was in charge of the overall project, and about the workflow process by which it would come together.

Branch and sports editor Jason Stallman were concerned that the project's designers were willing to sacrifice the written narrative for the sake of design. Project photo editor Becky Lebowitz Hanger was concerned that not enough photographs were being included, that the "right" photographs were not being used, and that she was not being consulted enough during the design process. Multiple media editor and project designer Jacky Myint noted that the new organizational/editing process used with *Snow Fall* differed from previous long-form multiple media projects at *The New York Times*. Nevertheless, Branch said that once the project was underway and the group began to work more closely together it all became a moot point.

A factor benefiting *The New York Times* and *Snow Fall* was the fact that although a converging newsroom in the first decade of the 21st century led to consolidation across multiple news platforms and reductions in departments and bureaus, the cuts in personnel at *The Times* were not as deep as they could have been or as they were at other news

organizations. In fact, despite buyouts in 2008, 2009 and 2012, *The Times* restored the newsroom to more than 1,330 people, about the same size the staff was in 2003 and approaching its largest size ever (Somaiyaoct, 2014). And throughout 2014, despite eliminating guild positions, *The Times* continued to hire new employees (Levy, 2014).

Not all news organizations are as fortunate at *The New York Times*. Hanger said *The Times* gathered "an army of people" to work on the *Snow Fall* project, and thought it unlikely that many newspapers could do similar projects because they lack staffs large enough or with the "specific skill set" needed (personal communication, March 6, 2014). Videographer Catherine Spangler agreed that the *Snow Fall* journalists were specialists with very specific "niche skill sets," yet with the dedication of a team invested in the overall success of the project (personal communication, March 3, 2014).

As the project progressed, meetings were held where the group would go over the material in hand, look at suggested designs, and discuss possible approaches. Myint said the editing process was her biggest challenge: She continuously added and subtracted narrative elements to the page design to actually experience how everything worked within the overall narrative. The *Snow Fall* team concentrated on keeping reader attention focused on "the arc of the story" and positioned multimedia within the narrative where it felt "natural" and helped readers better understand the story. Branch said they tried to integrate multimedia into the narrative in a way that did not disrupt the story. He said they tried to keep the reader "inside the story" and "set a mood," so that every decision revolved around "what's best for the reader" (J. Branch, personal communication, January 30, 2014).

It was the new workflow—putting things in, arranging meetings, discussing the results, taking things out, and repeating the process—that made the group more conscious of the actual online experience and made them want to focus on the overall narrative experience rather than prioritize the written narrative to the exclusion of other media (J. Myint, personal communication, March 10, 2014). Unlike past workflows where editing of different media was done in isolation, *Snow Fall* editing was done collaboratively.

Despite the different skill sets and the size of the staff responsible for its production (a total of 17 people were directly involved), *Snow Fall* interview participants concluded that the close collaboration of the group was perhaps the main reason for its success. On previous *Times* projects the text, photography, video, and graphics were edited independently and the project was designed separately, which speeded up the entire production process but failed to consider the multimedia elements, the editing, and the design processes holistically. The *Snow Fall* project was an attempt by the group to edit all of the multimedia elements as a whole—a complete story. Its construction entailed a semiotic relationship in which the whole was modified by an analysis of the relationships between the parts (Rodrigues & Freitas, 2014), that is, putting things in, arranging meetings, discussing the results, taking things out, and repeating the process. *Snow Fall* was, in effect, a collective authorship.

What journalists leave in or take out of a story frames the story by structuring it in a certain way. Interestingly, all of the interview participants expressed concern for including too much multimedia in the project. Myint said they were aware of the "Wow" factor of the project and understood the temptation to include a multiple media element

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just because "it looks cool." But they collectively asked the question, "Does it actually help the story?" (personal communication, March 10, 2014).

The "promotional mission" of advertising and its potential intrusiveness on narrative content online also has caused division in newsrooms and raised questions about journalism independence. As noted by Keith and Thornton (2011), some newspaper organizations view the primary purpose of their websites as marketing and promotion tools rather than news sites. Here, too, *The New York Times* was fortunate. When CEO Mark Thompson attended a meeting at which *Snow Fall* was presented prior to its publication and came away impressed, he asked the group to make certain advertising did not harm the presentation's design. Thompson's comments helped the group "take a broader view" of how to monetize content (J. Branch, personal communication, January 30, 2014) and demonstrated support from top management for the groups approach to multiple media narrative reporting.

As previously indicated, collaboration among multimedia journalists is important to narrative effectiveness. Spangler thought the success of the team was due to "sharing the same vision" for the project and taking "a populist approach" to the editing process (personal communication, March 3, 2015). Stallman said, "It was very much a group collective decision-making process" where they worked out what was working and what wasn't and that the editing process required "a spirit of cooperation and a willingness to incorporate different elements" into the overall narrative (personal communication, March 5, 2015). Hanger said the project made them all "better editors" (personal communication, March 6, 2015).

Choices influence relationships and the choices made by *Snow Fall* journalists helped them join multiple media into a coherent and meaningful whole. What is best for journalists who produce multiple media stories like *Snow Fall*, Stallman noted, is that they "understand...other media and appreciate them" (personal communication, March 5, 2014). Branch said he was proud that editing decisions about what to include or not include were "made with one thing in mind, and that is, what's the best for the reader to try to understand the story" (personal communication, January 30, 2014).

Chapter 7
CONCLUSION

> Until such a time as we cease to exchange understandings in the form of
> stories, we will need to remain dependent on the logic we use to shape and
> to understand stories. (Brooks, 1984/2005, p. 204)

The purpose of this research was to explore how multiple media combine as narrative expression in an interactive online environment, to examine how form and presentation affect narrative coherence and semiotic potential, and to consider how journalistic procedures influence the decisions made by individuals who practice multiple media storytelling.

This qualitative case study took a combined theoretical approach in considering how technological influences, framing, narrative structure, and related convergence factors such as organizational pressures, journalistic routines and values, and audience participation have helped shape the creation and presentation of online narrative.

Narrative communication online is evolving. *Snow Fall* is an example of how a committed news organization can effectively combine written text, still photography, video, graphics, and audio to tell a story. It has been called "the future of long-form journalism online." Whether or not that statement proves true, *Snow Fall* provides a glimpse into what may be a new form of nonfiction narrative reporting online and hints at what its future holds.

"Every new technology necessitates a new war," according to McLuhan and Fiore (1968, p. 98). Twenty-first century technology has undoubtedly altered the landscape of communications and brought with it revolutionary opportunities for creative change.

Digital technology has extended the capabilities of narrative communication and modified its form, and future battles over the control and implementation of new communication technologies will have consequences for society in general and journalism and nonfiction narrative reporting in particular.

Although new narrative forms are being created online, our understanding of exactly how these forms work is still evolving. As McQuail (2010) states, "It is still not clear how existing media will adapt to, or incorporate, the very diverse set of communication possibilities that continue to be developed on a trial-and-error basis in the media market" (p. 544).

Snow Fall demonstrates that combining multiple media narrative forms online can result in a powerful and effective method of narrative communication. But the question remains, will journalists have the opportunity to present these resource-heavy new narratives in a clear and coherent manner and will readers navigate these narratives without altering their intended meaning?

Interactivity (at least, as experienced on the Internet) is not truly part of the traditional narrative reading experience. The extent to which technology and interactivity become part of the normal reading experience online will likely determine the extent to which they are accepted as integral components of nonfiction narratives. Studies quoted in this thesis have indicated that some readers are put off by online technology: They may not be willing to overcome their reluctance to engage long-form journalism online if multiple media narrative structure feels unnatural, unfamiliar, and technically challenging. Perhaps in time, as McLuhan (1962) suggested, the shock of new technology's effect on our senses will diminish and lead to new perceptions. Or perhaps, as Kahn suggested,

these new technologies will lead to a loss of previous experiences and change how readers think of narratives.

Although much praise has been given to the *Snow Fall* online presentation, and deservedly so, it has been criticized for being over-produced, more interested in "bells and whistles" than traditional narrative journalism, and not worth the resources used to create it. It's likely that the effective use of digital technology in the construction of online multiple media narratives will be better understood once its newness and "wow" factor wears off. As McLuhan stated, new perceptions occur once the shock of new technologies are absorbed by society.

Creators of long-form journalism narratives must understand how narrative form or structure affects both narrative coherence and reader understanding. In multimodal narrative environments journalists must know which mode is most appropriate for the content and the meaning they wish to express (Kress, 2004, para. 23).

Multiple media long-form journalism isn't simply a matter of selecting which type of content is best suited to which type of media, however. It's a matter of understanding how to combine these different types of media into a meaningful narrative that uses words, pictures, video, motion graphics, illustrations, audio, and interactivity to tell a coherent story.

On that level *Snow Fall* appears successful: It demonstrates an understanding of how to apply traditional narrative standards to new narrative forms. The main points from the results and discussion sections indicate that *Snow Fall* places high value on reader accessibility, narrative coherence, compelling storytelling, tight editing, collaboration, and a willingness to experiment. It applies the basic principles of traditional narrative

storytelling to an online environment, imbuing "life events with a temporal and logical order" (Taylor, 2001). It has a traditional narrative structure: a beginning, middle, and end. It allows the elements of the story to unfold naturally. It limits superfluous and distracting information. It prevents readers from altering the syntactic relationship (i.e. its construction or structure) between narrative elements and keeps readers on the narrative path by limiting links, interactivity, and multimedia.

Snow Fall combines traditional print design concepts with the evolving principles of Web page design to create a reading experience that feels "natural." Its design is "layered" (e.g. DeVigal's "interplay of story elements"). Its multiple media elements are displayed and positioned in the layout in a way that makes them both informative and elegant and captures reader attention. It organizes narrative elements to maintain continuity and coherence across multiple spatial and modal segments, and "develops a set of ideas from frame to frame, building an argument at the levels of context and form, exploiting the possibilities of visual echoes, resonances, repetitions, juxtapositions, absences and discontinuities" (Soske, 2009). It strives for clarity so readers can make sense of things. It is holistic: It establishes relationships between individual "signs," which contribute to the meaning of each sign, as well as to the signs that precede and follow. Its design principles, accordingly, can be regarded as syntactic elements that correspond to grammar in the construction of narrative. It uses "white space" expansively as a pallet on which to display both text and visuals and as a frame to direct attention and provide a consistent visual aesthetic.

Snow Fall incorporates state of the art digital technology into narrative storytelling without overwhelming the reader. Multimedia is used appropriately to

enhance the story, not simply as a "bells and whistles" effect. Multimedia's narrative role is supportive or expansive, but not repetitive. Its media forms are equal partners, interconnected to form a single narrative. Some story aspects are told in text, others are shown in photographs, video, or motion graphics, and all are positioned within the text where relevant. It uses motion graphics to (elegantly) convey complicated information that would have been difficult to convey briefly in words, such as the path of each skier down the mountain or the motion of an avalanche in real time. Its primary and secondary elements (visual and textual) reinforce each other. Visuals and multimedia elements are varied in size for impact and story-telling effect, and incorporated into the story in a way that feels natural and doesn't interrupt the flow of the narrative. And lastly, in the best tradition of narratives, it is an immersive experience.

In some ways, *Snow Fall* was an unintentional experiment. At its start neither its organizational structure nor its production workflow was firmly established, and its lines of authority over who was in charge were vague. But the group took a collaborative approach: experimenting with various media combinations, using trial and error in the narrative's construction, and meeting regularly to collectively discuss what worked and what didn't work. Over time they came to experience the multimedia narrative from the perspective of readers, not simply as journalists, which helped them understand how it fit together as a narrative experience. Perhaps what most separates *Snow Fall* from *Punched Out* is that, in Spangler's words, the team had a collective "vision" of what they wanted it to be—an immersive narrative experience in which the various media flowed seamlessly and coherently into one another, kept readers involved in the storyline, and felt natural.

If nothing else, *Snow Fall* has generated considerable discussion within the

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journalism, communication, online, and education communities about what makes it successful. That effect alone is a contribution to the evolution of multiple media narrative reporting. Spangler said, "I don't think there's an answer to 'What is the future of online long-form narrative journalism?' or narrative journalism in general. But I think it is an achievement to have people thinking about the possibilities of what that could be and talking about it" (personal communication, March 3, 2014).

It is important for communication researchers to identify and understand the sometimes-frustrating changes taking place in new media forms in order to influence change by getting ahead of it and providing relevant concepts for further study. As Mark Federman (2004), former chief strategist for the McLuhan Program in Culture and Technology, wrote:

> 'The medium is the message,' tells us that noticing change in our societal or cultural ground conditions indicates the presence of a new message, that is, the effects of a new medium. With this early warning, we can set out to characterize and identify the new medium before it becomes obvious to everyone—a process that often takes years or even decades. And if we discover that the new medium brings along effects that might be detrimental to our society or culture, we have the opportunity to influence the development and evolution of the new innovation before the effects become pervasive. As McLuhan reminds us, 'Control over change would seem to consist in moving not with it but ahead of it. Anticipation gives the power to deflect and control force.'" (p. 2)

Narrative storytelling online is changing and the methods used to analyze the effectiveness of these stories need updating and perhaps revision. The development of multiple media narrative storytelling online depends upon several factors: the lines of authority over content and presentation; the effects of technology on production, presentation, and reader engagement; the effective selection and combination of multiple media; the influence of advertising and marketing forces; and the ability of consumers to understand the conventions of online communication as they relate to multimedia narratives.

The content, context, and form of narrative communication are evolving along with the development of digital technology. The ability to interpret narrative form online requires an understanding of its conventions or codes, which are dynamic and fluid. As Chandler points out, "codes provide a framework within which signs make sense...[and] if the relationship between a signifier and its signified is relatively arbitrary, then it is clear that interpreting the conventional meaning of signs requires familiarity with appropriate sets of conventions" (p. 147-148).

The language and conventions used for analysis of these new forms is borrowed and adapted from the old forms of narrative communication, which some see as a possible hindrance to their development. The danger in using the language of one discipline (traditional narrative) to describe another (new narrative) is that "established language can preserve the ontology of the old in the new" (Dilger, n.d., para. 24). However, new narrative forms are not new paradigms. They have evolved from traditional narrative forms and share many of the same concepts and terminology.

The media convergence of textual, audiovisual, and graphic forms in the early years of the 21st century suggest that the implementation of a new multiple media news language and new production practices are still in their initial phases (Domingo, et al., 2007, p. 5). It is possible that multiple media narrative reporting online will take its place alongside other narrative forms such as cinema and photography that were "new" at the turn of the 20th century and that a language more suitable to analysis of new narratives will emerge. Nevertheless, an understanding of how to adapt traditional concepts of narrative construction to new narrative structures requires shared knowledge across multiple disciplines, which is not easily found in today's converging media universe. That process, too, is only now beginning, as *Snow Fall* demonstrates.

Digital technology and the Internet have not simply provided a new medium or method of delivery for long-form narrative journalism. They have changed how narratives are presented, accessed, and understood. Change (instability) in narrative form is part of an online reading experience in which the narrative sequence of original texts can be altered with the click of a button. By analyzing these changes and showing how they influence meaning we can learn to better navigate these new narratives from the viewpoint of both their creators and consumers. Perhaps what is necessary is not so much that we develop a new language for multiple media narratives, but that we understand the rules that already exist and how they can be applied to these new narratives in ways that make sense to the reader/viewer?

Challenges remain. The hope is that in some small way this study can provide both theorists and practitioners with information that will help them anticipate the challenges ahead and shape the future of new narratives.

Limitations of Study and Areas for Further Research

Generalizations in a single case study are both difficult and dangerous because the focus of the study is narrow and limited to a single organization or occurrence and researchers are unable to gather additional data from similar studies and compare observations, insights, and implications. Comparisons between *Snow Fall* and *Punched Out* were made to present *Snow Fall* in sharp relief, rather than an analysis of two case studies. Due to the particularity of this case study, its concepts and findings have limited applicability to other newspapers' online multiple media narrative presentations. Although *Snow Fall* provides sufficient data and concepts for further exploration of multiple media narrative form, as a single qualitative study the findings are not generalizable.

Although *Snow Fall* points to the storytelling potential that combining words, pictures, video, and interactive graphics has for long-form journalism online, reader insight into the influence these forms have on meaning and understanding was not considered. A study of reader interest in and comprehension of long-form nonfiction narrative such as *Snow Fall* could help journalists better understand the effectiveness of its construction and the viability of its form. A follow-up study comparing how audiences process different types of long-form narrative presentations and what effect they have on retention, understanding, and meaning would add significant value to the overall study. More study is also needed to determine how meaning is affected when readers participate in the construction of narrative by choosing the form and the order in which it is read.

Snow Fall is a distinctive presentation that required extensive resources and considerable time to report and produce. Few news organization have the resources of

The New York Times and it is not likely many can easily produce similar long-form multiple media narratives in the present economic and news environments. Although combining multiple media forms is becoming more prevalent in online narrative storytelling as technology becomes more advanced and journalists and readers become more sophisticated in utilizing online media, not all stories are suited for the type of multiple media treatment and presentation that *Snow Fall* employs. Accordingly, it is worth examining the type of stories that best fit this format and presentation style, the kind of resources they require, and the ability or inability of smaller news organizations to produce them.

The design and performance of any technology affects its usefulness and its value. Research shows that readers have little patience for poorly designed Web interfaces and complicated Web technology, particularly in relation to visuals (Caple & Knox, 2012; Leckner, 2012; Robinson, 2011; Santana, et al., 2011). A study of the relationship between readers' technological/computer skills and narrative consumption online would help explain what part technology plays in reader willingness to navigate multiple paths in online narratives. Eye-tracking studies could provide data showing what elements disrupt reader attention, concentration, and narrative coherence and to what degree. Social science studies using interviews, focus groups, and experiments to measure the effects of technology and design on narrative engagement could help measure the influence of design on reader interest and help explain how design can incorporate technology to construct more effective multiple media narratives.

Change occurs at a furious pace in today's media universe and it can be difficult keeping up, particularly when economic concerns compromise newsroom budgets. This

paper did not examine in depth the part training and education plays in helping journalists construct coherent multiple media narratives—a significant factor affecting both still and video production, graphic construction, Web page design, and long-form journalism online. Editors, reporters, photographers, graphic artists, and designers in today's newsrooms are confronted with new job responsibilities requiring new skills. Online production, video and audio reporting, and changing technologies require considerable training, which takes time, money, and commitment. How economic factors contribute to the problems facing online newsroom technology was not considered in detail, although they may be the single largest mitigating factor in convergent media. Solving many of the issues listed here is an expense that today's struggling media may not be willing or able to incur in the immediate future. It is worthy of additional study.

And finally, the variety of journalism and technology skills employed to create sophisticated multiple media narrative presentations like *Snow Fall* require a substantial degree of cooperation among the individuals who produce them. These narratives require an uncommon collaborative approach to authorship that is found more often in the production of film and television narratives than in nonfiction journalism. A close examination of how successful presentations in these fields were orchestrated may help establish collaborative multimedia workflows on which to build these new narratives.

Figure 1. Romney's acceptance speech on MSNBC. Screen shot capture from the following day.

Figure 2. Romney's acceptance speech on Fox News. Screen shot captured the following day.
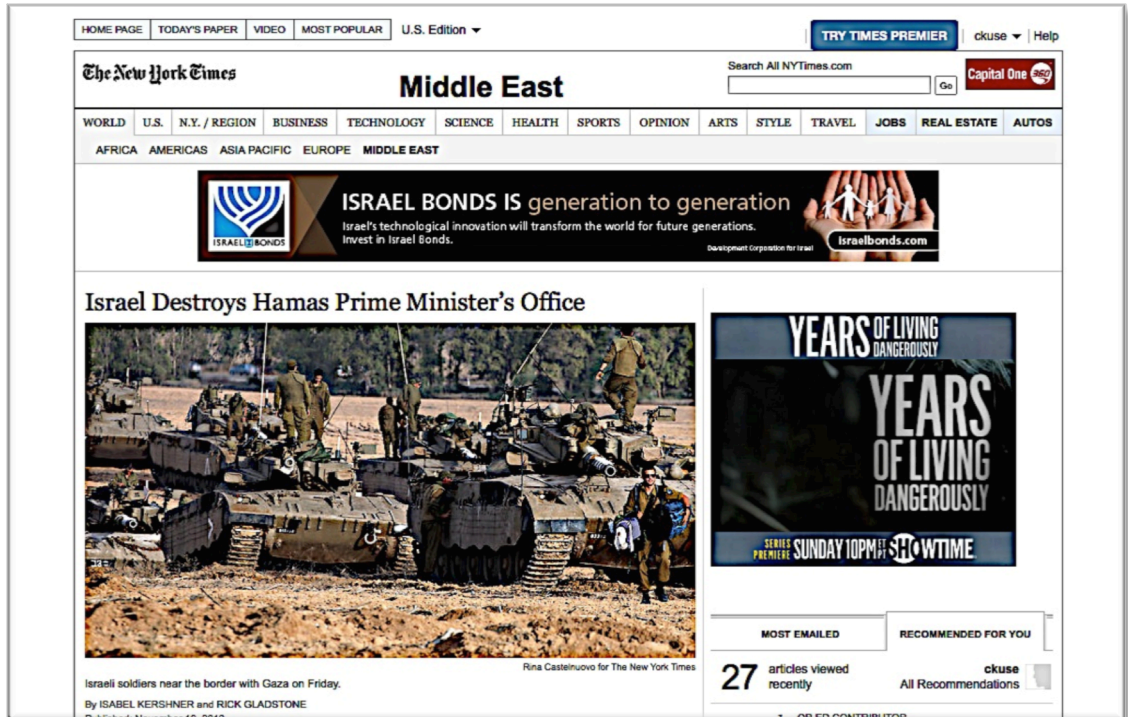
Figure 3. The original auto-play video ad of the "Lincoln" movie that accompanied the Israel story in *The New York Times* is no longer available. Although the video ad position on the Web page remains the, the ad sponsor has changed several times. The Showtime video ad shown here same ("Years of Living Dangerously") is not an auto-play video. The reader must click on the ad to play the video.

Figure 4. Punched Out, part one header.

Figure 5. Punched Out, opening screen of part one.

Figure 6. Punched Out, part one, top of single page.

Figure 7. *Punched Out,* part one as a single page.

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Figure 8. Punched Out, part one, first page of multiple page presentation.
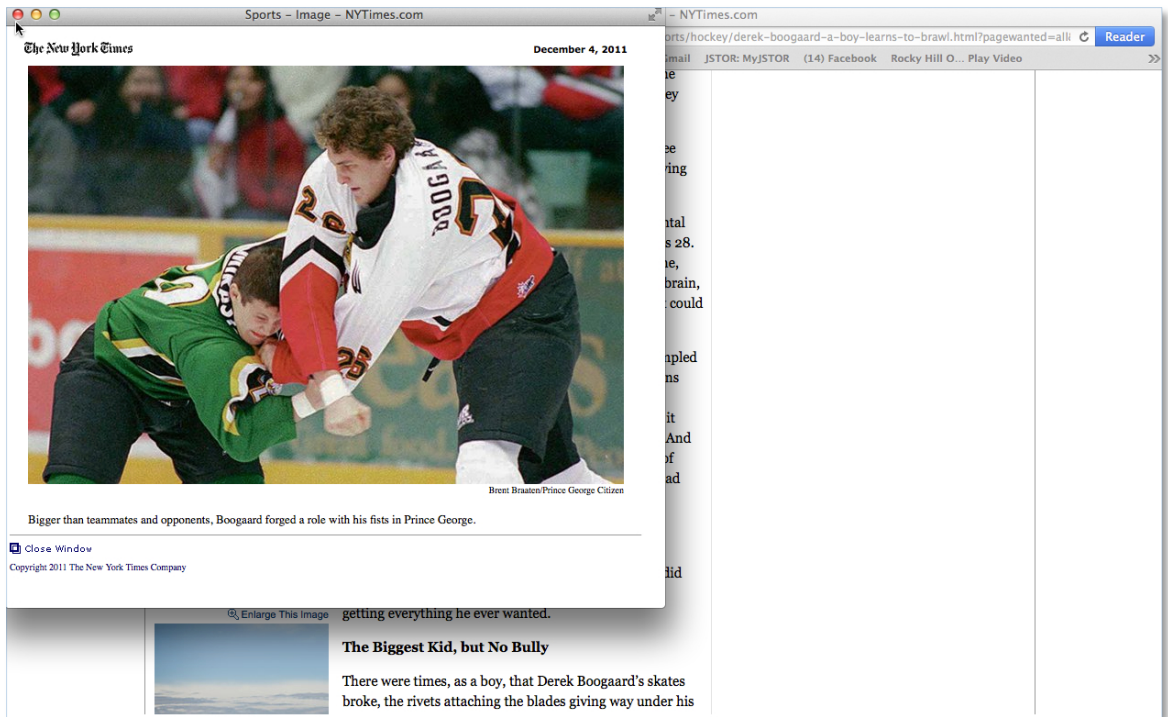
Figure 9. Still images and videos open on top of the text.

Figure 10. The *Punched Out* three-part interactive video feature is about 37 minutes.
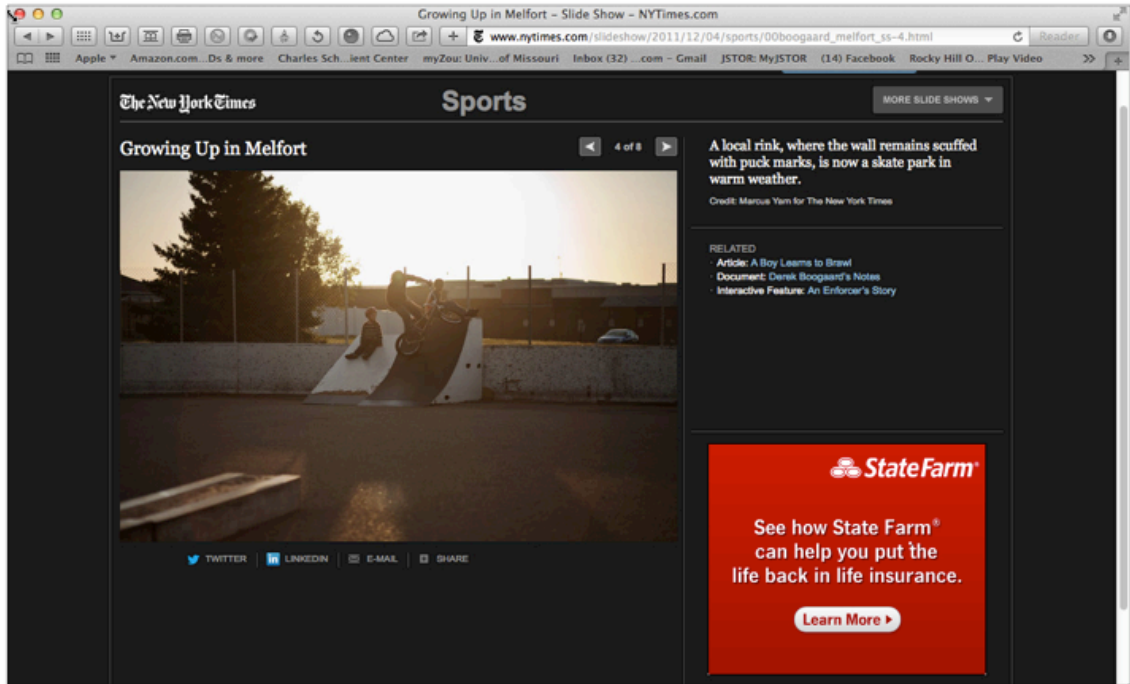
Figure 11. The *Punched Out* slide show viewer returns readers to the main story when they click the "Article" link to the right of the photograph, but not to the page they were reading.
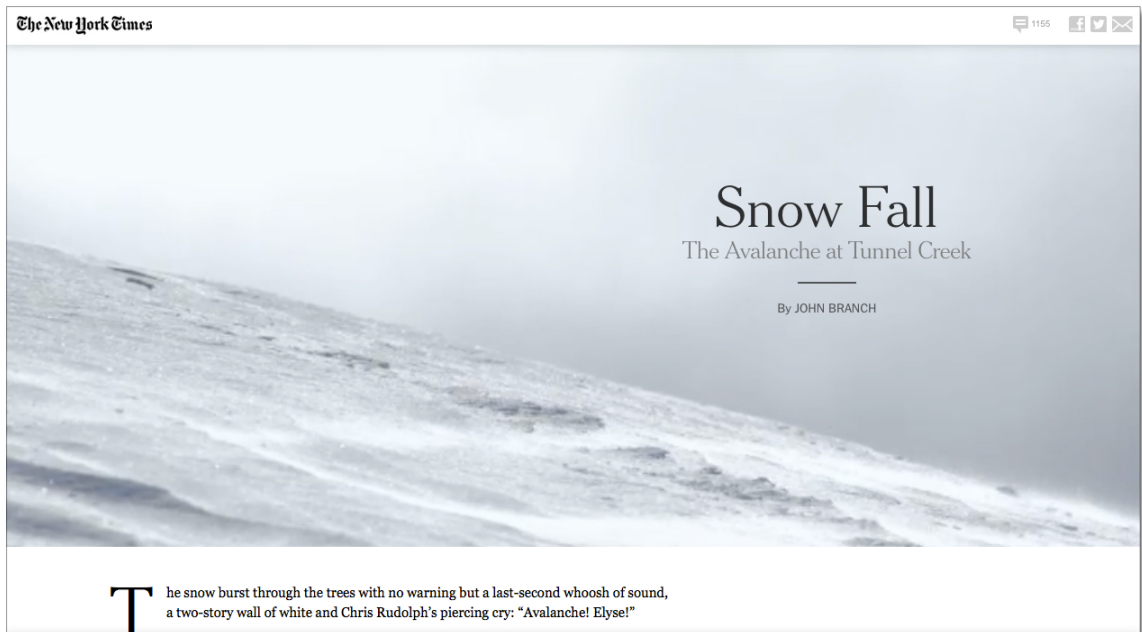
Figure 12. Snow Fall display of the opening chapter full screen.
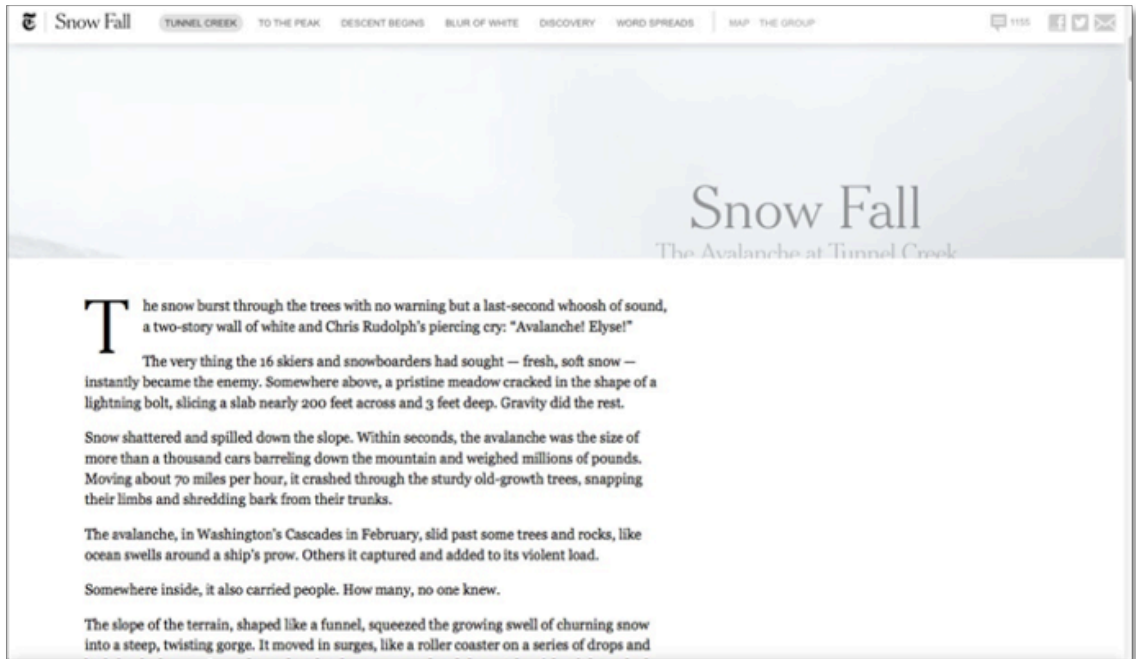
Figure 13. Parallax scrolling on *Snow Fall*'s opening screen.
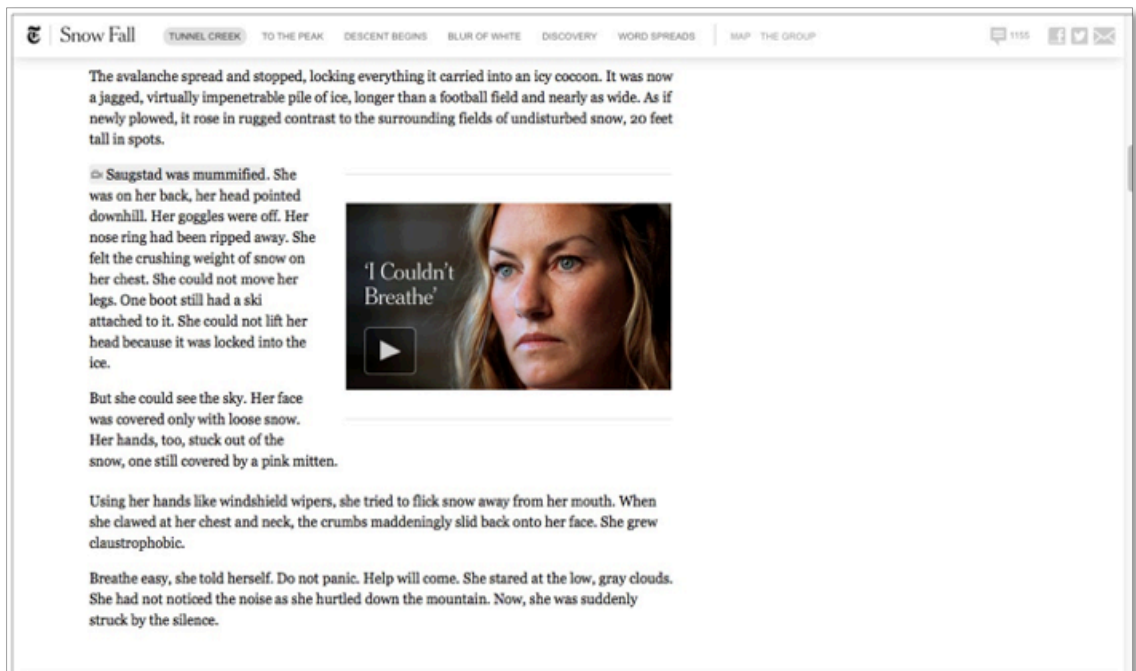
Figure 14. Snow Fall inline video placement within the text.
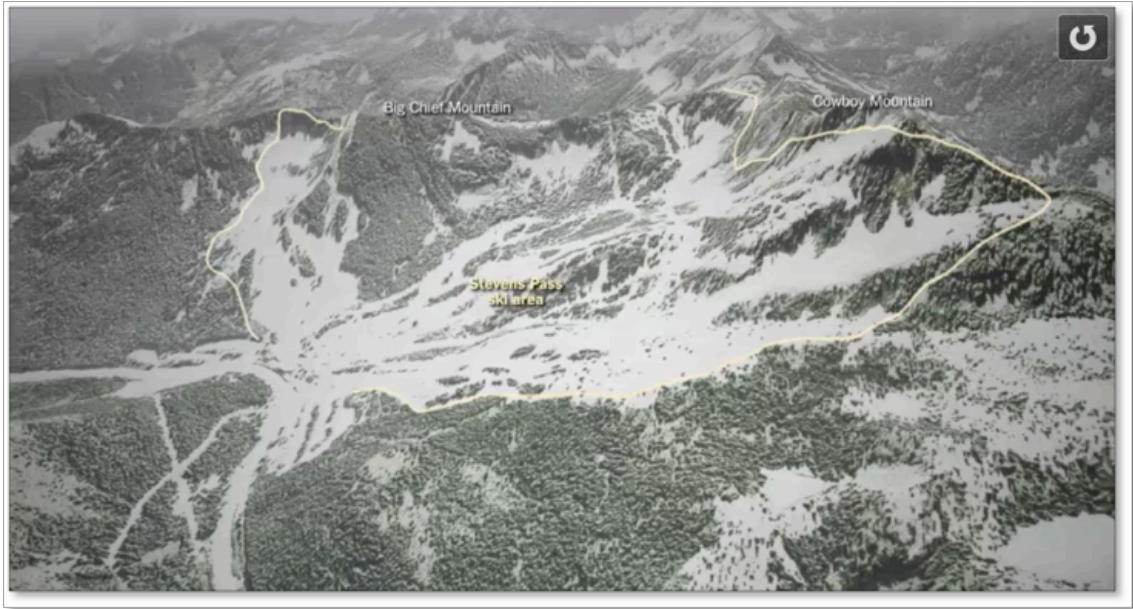
Figure 15. Motion graphic "flyover" of Cowboy Mountain.

It is a term with broad meaning. The name is derived from the Cascade Tunnel, originally a 2.6-mile railroad tube completed in 1900 that connected the east and west sides of the Cascades, a boon for the growth of Seattle and Puget Sound. The mountain pass that it burrowed beneath was named for the project's engineer, John Frank Stevens, who later helped build the Panama Canal.

In late February 1910, ceaseless snowstorms over several days marooned two passenger trains just outside the tunnel's west portal. Before the tracks could be cleared, the trains were buried by what still stands as the nation's deadliest avalanche. It killed 96 people.

Figure 16. Parallax scrolling moves text and photographs up over the Cowboy Mountain motion graphic as readers scroll to advance the story.
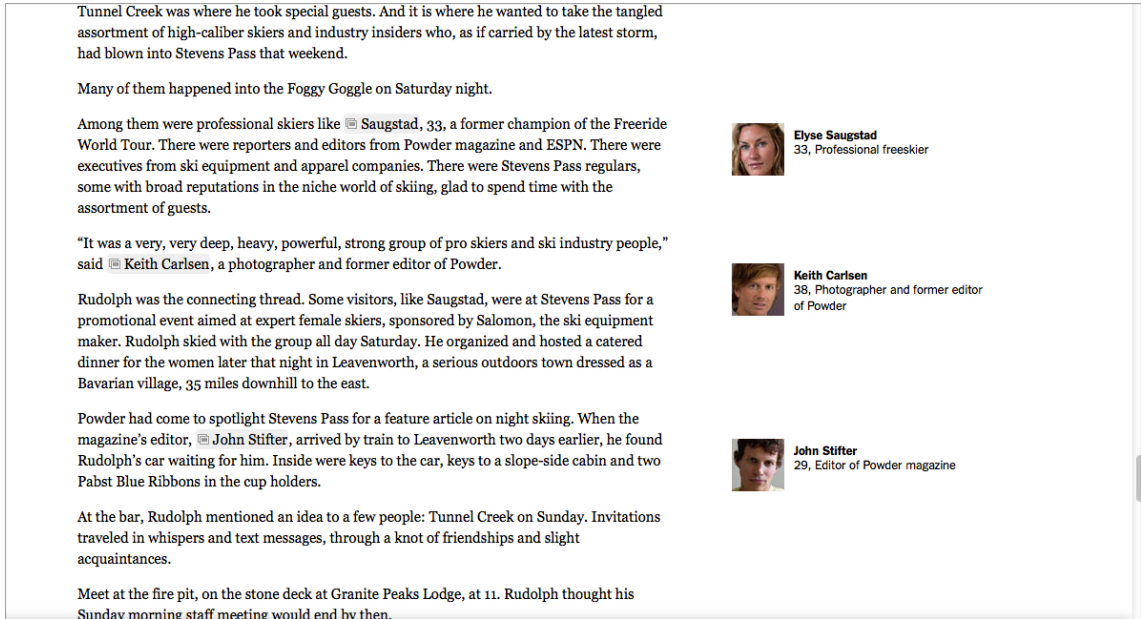
Figure 17. "Character card" slide shows are accessed by clicking on a thumbnail portrait positioned to the right of the story.
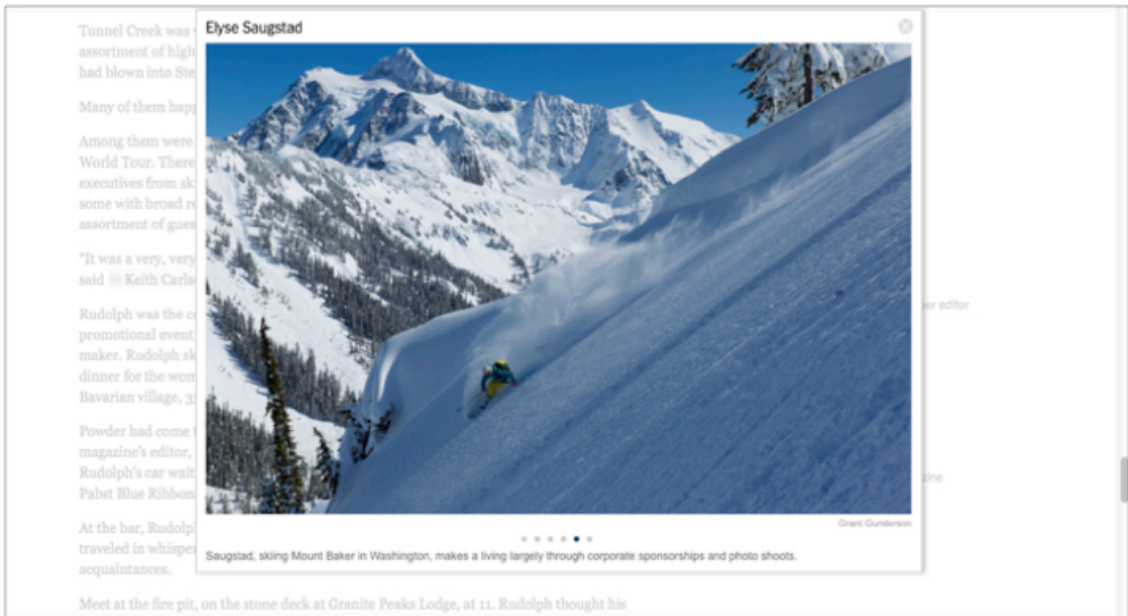

Figure 18. "Character card" slide show photographs open on top of faded gray text. Readers click to advance the photographs.

Figure 19. Slide show photographs function both as still images and as multiple image presentation. Clicking the picture frame icon opens the slide show as in Figure 18.

Figure 20. Banner ad placement divides the text.

Figure 21 and *Figure 22*. Top and bottom of *Snow Fall*'s opening chapter.
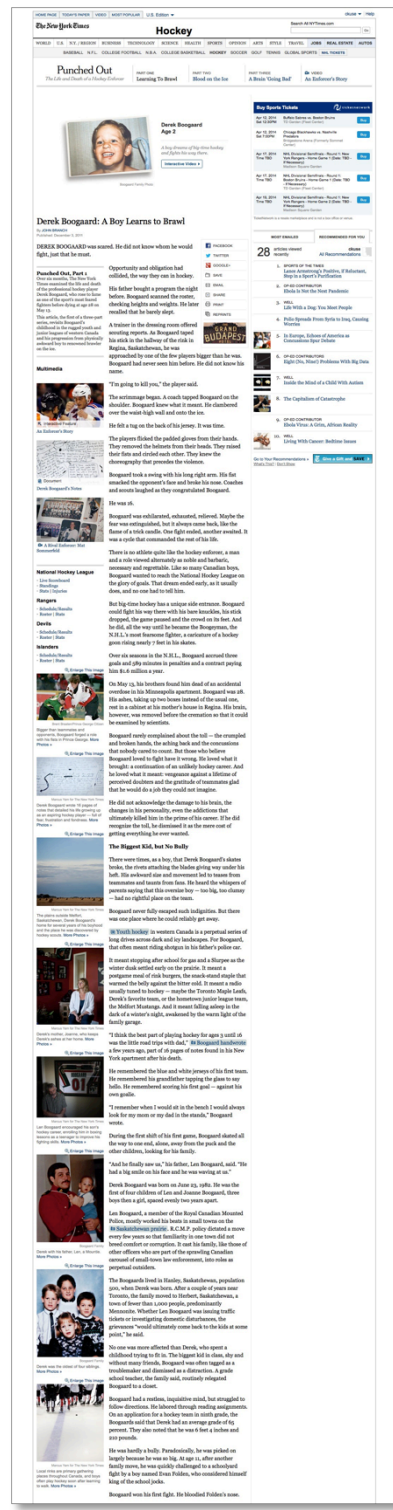
Figures 23 and *24.* Openings of *Snow Fall* (left) and *Punched O*
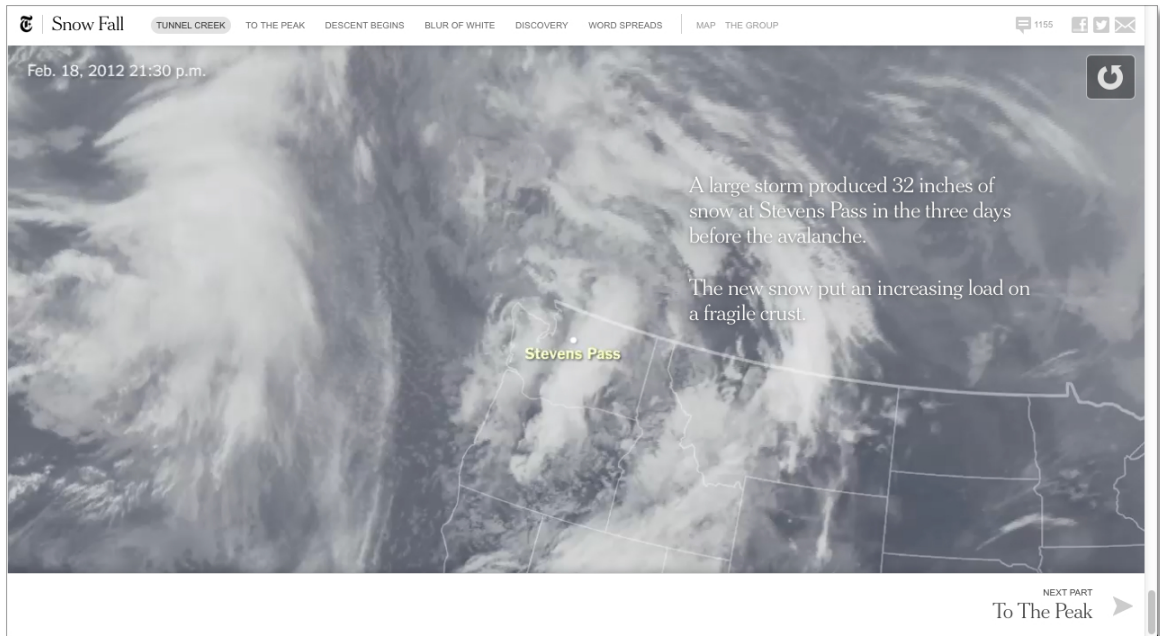
Figure 25. Chapter links above and below a motion graphic at the bottom of Chapter 1.

Table 1.

Phases of thematic analysis.

- Familiarize yourself with the data. Transcribing data (if necessary), reading and rereading the data, noting down initial ideas.

- Generating initial codes. Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.

- Searching for themes. Collating codes into potential themes, gathering all data relevant to each potential theme.

- Reviewing themes. Checking in the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.

- Defining and naming themes. Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells; generating clear definitions and names for each theme.

- Producing the report. The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back the analysis to the research question and literature, producing a scholarly report of the analysis.

Note. Adapted from *Using thematic analysis in psychology* (electronic version), p. 35, by V. Braun and V. Clarke, 2006, Qualitative Research in Psychology.

Table 2.

A 15-point checklist of criteria for good thematic analysis.

Transcription

- The data have been transcribed to an appropriate level of detail, and the transcripts have been checked against the tapes for "accuracy."

Coding

- Each data item has been given equal attention in the coding process.

- Themes have not been generated from a few vivid examples (an anecdotal approach), but instead the coding process has been thorough, inclusive and comprehensive.

- All relevant extracts for all each theme have been collated.

- Themes have been checked against each other and back to the original data set.

- Themes are internally coherent, consistent, and distinctive.

Analysis

- Data have been analyzed – interpreted, made sense of - rather than just paraphrased or described.

- Analysis and data match each other – the extracts illustrate the analytic claims.

- Analysis tells a convincing and well-organized story about the data and topic.

- A good balance between analytic narrative and illustrative extracts is provided.

Overall

- Enough time has been allocated to complete all phases of the analysis adequately, without rushing a phase or giving it a once over lightly.

Written report

- The assumptions about, and specific approach to, thematic analysis are clearly explicated.

- There is a good fit between what you claim you do, and what you show you have done – i.e., described method and reported analysis are consistent.

- The language and concepts used in the report are consistent with the epistemological position of the analysis.

- The researcher is positioned as active in the research process; themes do not just "emerge".

Note. Adapted from *Using thematic analysis in psychology* (electronic version), p. 36, by V. Braun and V. Clarke, 2006, Qualitative Research in Psychology.

Table 3.

Stake's "critique checklist" criteria to assess final report quality.

- Is the report easy to read?

- Does it fit together, each sentence contributing to the whole?

- Does the report have a conceptual structure (for example, themes or issues?)

- Are its issues developed in a serious and scholarly way?

- Is the case adequately defined?

- Is there a sense of story to the presentation?

- Is the reader provided with some vicarious experience?

- Have quotations been used effectively?

- Are headings, figures, artifacts, appendixes, and indexes used effectively?

- Was it edited well, then again with a last minute polish?

- Has the writer made sound assertions, neither over-nor under-interpreting?

- Has adequate attention being paid to various contexts?

- Were sufficient raw data presented?

- Were the data resources well chosen and in sufficient number?

- Do observations and interpretations appear to have been triangulated?

- Are the role and point of view of the researcher nicely apparent?

- Is the nature of the intended audience apparent?

- Is empathy shown for all sides?

- Are personal intentions examined?

- Does it appear that individuals were put at risk?

Note. Adapted from *The art of case study research* p. 131, by Robert E. Stake, 1995, Sage.

Table 4.

Lofgren's 6-step coding scheme.

- Read all transcripts and quickly browse through transcripts as a whole. Compile notes about first impressions and read through all transcripts a second time.

- Label relevant pieces of data: words, phrases, sentences, or sections. Labels can be about actions, activities, concepts, differences, opinions, processes, or whatever the researcher thinks relevant.

- Determine relevance for one or more of the following reasons: it is repeated in several places; it surprising; the interviewee explicitly states that it is important; the researcher read about something similar in previously published reports or articles; it reminds the researcher of a theory or concept; or other reasons the researcher thinks are relevant.

- Review all the codes created in the previous step. Decide what codes are the most important and create themes or categories by bringing several codes together if appropriate.

- Drop initial codes that are not appropriate for the research topic. Themes do not need to be of the same type.

- Label the themes and decide which are the most relevant and how they are connected to each other. Describe the connections between the categories or themes. These categories or themes and their connections are the main result of the study.

- Write up the results. Describe the themes and how they are connected. Do not interpret the results.

- Under the heading "Discussion," write out interpretations and discuss the results. Interpret the results in light of results from similar or previous studies published in relevant academic journals and articles, theories or concepts from your field, or other relevant aspects.

Note. Adapted from *Qualitative analysis of interview data*, n.p., by K. Lofgren, 2013, Umea University.

Consent Form

I am conducting research for a Master's thesis titled "Navigating the New Narrative. A Case Study of 'Snow Fall: The Avalanche at Tunnel Creek.'" I am conducting this research to complete my Masters' Degree from the University of Missouri-Columbia.

You are being asked to participate in this study because of your direct involvement in the creation and/or production of *Snow Fall*. I am asking you to take part in this research study because I am studying how visual and written expression combine to tell stories online, and *Snow Fall* is an example of how that happens. Participation involves individual interviews either face-to-face, via telephone or via questionnaires. This study does not involve group interviews.

There are no foreseeable risks to you for participating in this research project. Your participation, however, is purely voluntary. You may refuse to participate. Should you agree to participate you may still withdraw from participation at any time without consequence.

The questions you will be asked pertain to *Snow Fall*, your role in it, and your feelings and thoughts about it. The questions are not simple "yes/no" questions. They allow you to answer in detail should you choose to do so. If you would prefer not to answer a question, feel free to skip that question. If you would like to stop participating and continue at a later date, or stop altogether, you may if you wish. You will not be penalized for deciding to stop participation at any time.

The interviews will be conducted on site at *The New York Times* if possible. Should you be unwilling or unable to conduct the interview in person, a telephone interview or a questionnaire will be substituted. The in-person and telephone interviews will be taped to ensure accuracy, unless you object. You may review both the transcript of your interview/questionnaire responses and the taped comments and edit comments, make corrections or deletions, or add clarification as needed.

This collected information may be used in published research as well as in academic presentations. The information will not be published publicly without your permission and/or the express permission of *The New York Times*. It is hoped that you will allow your name to be used in this research study to provide an authoritative voice to the data, but should you object to using your name the information you provide would be listed as anonymous. You may also request that information you have provided not be used. You will not benefit directly from participating in this research study. You will not be paid for participating in this study. It is expected that your participation will provide insight and perspective.

Any interview recordings, along with notes and interview transcripts, will be available only to my thesis advisor and three other members of my thesis committee. Any

recordings will be kept for approximately seven years after the acceptance of my thesis. After that time the tapes will be destroyed if that is your request or kept indefinitely. The recordings would be destroyed should my thesis not be accepted. All of the papers and audiotapes pertaining to the study will be kept in a locked file cabinet, and all electronic data will be stored in computer files on an external hard drive that can be accessed only by me using a secure password. Only people who are directly involved with the project will be provided access to those records. If any other uses for the information you provide are contemplated you will be contacted for your verbal or written consent.

If you have any questions or concerns about the research, you may contact me at John Scanlan, 3 Avalon Place, Wethersfield, CT. 06109. Telephone: (860) 461-9843. Email: johnsscanlan@gmail.com. Also, please feel free to contact my thesis advisor Dr. Keith Greenwood at the University of Missouri-Columbia, 106 Lee Hills Hall, Missouri School of Journalism, Columbia, MO. 65211-1200. Telephone: (573) 882-4867. Email: greenwoodk@missouri.edu.

If you have questions regarding your rights as a research participant, contact the University of Missouri Campus Institutional Review Board office at (573) 882-9585

Answering the interview questions indicates you consent to participate in this research project.

Please sign below to indicate that you have read and understand this request and return it to me at 3 Avalon Place, Wethersfield, CT. 06109 using the enclosed, stamped envelope.

Participant's signature

_____

1. Would you say that *Snow Fall* originated from the bottom up or the top down, meaning did non-management and/or middle management employees suggest the online approach to upper management and just "run with it," or was permission required for the bigger effort before anyone could proceed?

2. Were the decisions about the approach, content and design a collaborative effort between news, design and web employees and can you cite some examples of how this did or didn't work? Can you identify instances of intra-unit cooperation that might apply to *Snow Fall*? If there were differences of opinion, how were they resolved?

3. Did technological, financial, or personnel issues influence the production of *Snow Fall* in either a positive or negative manner?

4. In a project of this scope – using text, video, still photography, audio, interactive maps and motion graphics – how does the final editing process work? Who is responsible for maintaining overall narrative coherence? Did *Snow Fall* require a different method of editing or was it similar to the way editing already takes place on larger narrative projects both in print and online.

5. Do you think combining several skills within one individual is a necessary requirement in today's online multiple media environment or do you think journalists who possess specialized skills (such as photojournalist, video-journalist; newspaper page designer, web page designer; newspaper visual editor, web visual editor; newspaper graphic designer, interactive graphic designer) are equally effective or perhaps more effective?

6. Were the additional mediums included to support the written narrative — meaning to fill in the gaps by providing additional information — or were they included as separate narrative "sidebars" which the reader could choose to access or not? Perhaps both, or neither?

7. Was the temporal order inherent in the written narrative considered in placing video and motion graphics within the text, i.e. did you try to match the photographs, video and audio to the timeline of the text?

8. In placing the photographs, video, audio, and motion graphics within the written narrative, was it necessary or important to adjust the written narrative in any way to better accommodate those forms, or were those forms adjusted to better accommodate the written narrative? For example, were restrictions placed on video length, the number of still photographs included, or the amount of detail included in the motion graphics and, if so, can you explain the reason for the

restrictions?

9. Readers generally click on a video to view it online. When readers scroll to the part of the narrative that discusses "The Allure of the Backcountry" in *Snow Fall*, a video of a skier slaloming through deep snow plays automatically and stops after about 5 seconds. Readers then can click to view more of the video. In other sections the motion graphics play automatically when the reader scrolls to a specific area of the narrative. What factors (size, length, importance to the narrative, etc.?) determined which videos/motion graphics played automatically and which provided a choice to the reader?

10. What are the storytelling advantages and disadvantages, if any, between the print and online presentations of *Snow Fall*?

11. Can you provide examples of design choices and/or editorial decisions that helped the overall narrative experience online feel like a natural, uninterrupted, coherent process?

12. Some would describe *Snow Fall*'s online design style as conservative, understated, classic, or minimalist. Can you discuss the visual/design philosophy used in *Snow Fall* — including the extensive use of "white space" throughout — and how it influenced the overall presentation?

13. The use of parallax scrolling is being used more and more online, but it is not common. Can you discuss the decision for using it in *Snow Fall* and what you think it contributed to the overall presentation, if anything?

14. Were restrictions placed on video length, the number of still photographs included, or the amount of detail included in the motion graphics and, if so, can you explain the reason for the restrictions?

15. Were picture stories or picture essays considered for *Snow Fall*? Why or why not?

16. Some have suggested that *Snow Fall*'s design and graphics were a distraction to the story narrative. How do you view the role of graphics and design in *Snow Fall*?

17. Some believe hyperlinks offer readers the opportunity to delve deeper into a story by providing more information. Was there a reason hyperlinks were not included in *Snow Fall*? Do you think hyperlinks in text affects narrative coherence and reader comprehension?

18. *Snow Fall* did not use the following advertising options: pre-roll ads prior to the motion graphic content and videos [with the exception of the longer video at the end of the presentation]; product placements adjacent to news content; or pop-up ads. What factors led to the decision to place ads in horizontal strips and to not

use these other types of ads in *Snow Fall*, for example, were ads chosen primarily for their effectiveness as ads, their relative unobtrusiveness, their ability to transfer easily to a mobile platform, or for some other reason?

19. In your opinion, what was the most significant achievement of the *Snow Fall* project and why?

20. Do you have any other comments you would like to make about *Snow Fall*'s contribution to Lebowit multiple media journalism online or what that experience may have taught you about multiple media narrative communication?

APPENDIX E
Links to Presentations

1. *SNOW FALL* LINK
http://www.nytimes.com/projects/2012/snow-fall/ - /?part=tunnel-creek

2. *PUNCHED OUT* LINK
http://www.nytimes.com/2011/12/04/sports/hockey/derek-boogaard-a-boy-learns-to-brawl.html?&_r=0

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