

“Snow Fall”-ing Special Collections & Archives

Introduction

"Snow Fall" is a Pulitzer Prize winning (Pulitzer 2013), digital storytelling project produced with much fanfare, as well as some criticism, by the New York Times. It represents the next step in long form digital journalism. The web application tells a compelling story about the fate of 16 skiers and snowboarders during an avalanche. The textual element of the story is wrapped in a visually appealing interface with gently appearing and disappearing images, strategically positioned HTML5 video and image slideshows, maps and 3D visualizations. The form has been replicated several times since the launch, most notably by Outside Magazine (Outside 2013), and its title "Snow Fall" has become a verb in the digital journalism world. New York Times executive editor Jill Abramson:

“Snow Fall” is now a verb. “Everyone wants to snowfall now, every day, all desks,” she said.

Reporters are waiting for time to “Snow Fall” their bigger story. She said that the story originated from the sports desk — and took “months and months and months” of time — but Snow Fall-type projects can come from anywhere (GigaOM 2013).

Upon seeing "Snow Fall" and other similar projects, we saw a potential connection between this form of storytelling and Special Collections. Special Collections are full of interesting, rich and unique stories. Their digital representation, while widespread in content management systems such as ContentDM, can be lacking in sensory appeal.

As a pilot for using “Snow Fall” style long form narratives to promote Special Collections, two librarians at our institution developed a "Snow Fall"-like application for the exhibit *Cradle of Coaches: A Legacy of Excellence*, which was held in the [Unique Named] Special Collections at [Institution] in Fall 2013. Since

then we have developed three more using the same template to supplement Special Collections physical exhibits (Covington's Cincinnati, Stories of Freedom Summer from the Western College Memorial Archives, and the Ready Ones: American Children, World War II, and Propaganda). We feel that this is a new and exciting medium to tell the stories within Special Collections and Archives as well as general stories about libraries themselves. This paper discusses the technical details of the application, its place in Special Collections and Archives, and future additions.

“Snow Fall” Special Collection Exhibits at [Institution]

The [Unique Named] Special Collections at [Institution] offer exhibits drawn from the collections multiple times a year. Although brochures, photographs, and catalogs of materials used may persist after each exhibit is removed, the ‘essence’ of the exhibit itself is difficult to capture once the materials are returned to the shelves. Just as the ‘Snow Fall’ application can be used to tell a story out of the digital collections, it can also be used to recreate the essence of a physical exhibit, presenting a combination of narrative and materials arranged to tell a story. In some cases, such as the website created for the *Stories of Freedom Summer* (Ladd 2014) exhibit, it is quite literally a reproduction of the exhibit, using the same text and items in the physical exhibit but opening the exhibit to both distant and future audiences. In other cases, such as the website accompanying the *Cradle of Coaches: A Legacy of Excellence* (Ladd 2014), it serves as a supplement to the exhibit including additional information and items that could not be fit into the exhibit itself.

By definition, a special collections library holds much of the most rare and unique materials in the library system, but for these same reasons access to these materials can be a challenge. The library itself is a closed-stacks library and lacks the staff to be open at night or on weekends. Additionally, much of the materials kept in the library are documented in finding aids that may not be a natural source of

information to undergraduate students or others who are unfamiliar with academic library systems. Using a narrative format that students are more accustomed to experiencing helps to bring down some of these barriers.

The longform narratives are also a powerful promotional tool for both the special collections and the library system in general. By holding the unique and rare materials, the special collections library can present itself as the face of the library system, exhibiting what makes the library system stand out from others. The narrative also lends itself to a promotion by engaging users in a dynamic and media-rich format - even potential users who might not have a specific question or interest in the collections are likely to be drawn in by the experience of the narrative.

Current Trends in Special Collections & Archives

It is important to distinguish between a digital collection and an online exhibit. A digital collection is a long-term repository of materials with metadata focused on detailed description that maximizes search and retrieval. A digital collection has no attached narrative or ‘point’ to make - it is no more an exhibit than is a row of shelves. Like its physical counterpart, an online exhibit uses selected materials to tell a particular story. The emphasis is not on search and retrieval but rather on creating a narrative using objects from the collection. It serves the same purpose to a digital collection as an exhibit room does to the stacks of a physical collection.

Currently, the presentation of a narrative online by most Special Collections & Archives is via exhibits and blog posts. Online exhibits are a well-established practice and can be found using a variety of platforms like Omeka or Wordpress, or even homegrown solutions. These online exhibits may either

supplement physical exhibits or exist independently⁶. The idea of these online exhibits is, like most physical exhibits, very object-oriented - particularly in platforms like Omeka.

By contrast, the other common presentation technique in Special Collections & Archives is the use of blog posts, which can be found on many - if not most - Special Collections & Archives websites. This might be seen as the other extreme from the object-oriented digital exhibits. While materials from the collection might be included as part of the blog post, the narrative itself is the chief focus, and the subject of the blog posts are as likely to be events in the library as the collection itself.

The longform narratives could present a middle way between the two - using the narrative techniques found in blog posts but enhanced with media drawn from the collection. Like an online exhibit, the longform narrative includes navigation options that allow users to shift between discrete chapters and draws out a specific story from the collection. But unlike the online exhibit, it avoids becoming a curated set of objects to browse through, keeping instead the focus on the narrative itself.

Technical Details

Our “Snow Fall”-like long form application uses HTML5, custom JavaScript and jQuery, third-party jQuery libraries, all wrapped in a Bootstrap template. The effects that we wanted to achieve were the following:

1. A parallax scrolling effect.
2. Fading in and out of images as the user scrolls.

⁶ An example of a digital supplement to a physical exhibit at [Institution] was the [Cradle of Coaches: A Legacy of Excellence](http://spec.lib.miamioh.edu/cradleofcoaches) website (<http://spec.lib.miamioh.edu/cradleofcoaches>), built in Omeka to support an exhibit of the same name in Fall 2013. An example of a stand-alone digital exhibit at [Institution] was [A Gift of History](http://spec.lib.miamioh.edu/giftofhistory) (<http://spec.lib.miamioh.edu/giftofhistory>), also built in Omeka, which used select items from a larger digital collection.

3. A progress bar.
4. A lightbox for images.
5. HTML5 video.
6. Sliding transparent overlays on mouseover.

To view short clips of these effects in action visit <http://jasonpaulmichel.com/blog/videos-snowfall-functionality/>. To view all of our “Snow Fall” applications visit <http://spec.lib.miamioh.edu/home/digital-storytelling-projects/>.

Parallax Scrolling

From Wikipedia:

“Parallax scrolling is a special scrolling technique in computer graphics, wherein background images move by the camera slower than foreground images, creating an illusion of depth in a 2D video game and adding to the immersion (Wikipedia 2015).”

This effect has been employed in the world of web design since 2009. We employ a relatively subtle use of parallax scrolling because excessive parallax scrolling can slow down an application. Each long form website is broken into chapter-like sections, based on the content of the narrative. Before the beginning of each section is marked by a representative image applied as a background image.

These background images are fixed to the background, so when the next div in the HTML comes into the viewport, the div scrolls over the top of the background image. Additionally, while the background image is set to fixed via CSS, we used jQuery to move it slightly using. The combination of the slightly moving background image and the quicker moving div, which sits on top, creates a sense of 3D depth and a richer experience. Dan Cederholm and Ethan Marcotte have an excellent chapter on parallax scrolling in their book *Handcrafted CSS* (Cederholm 2010).

The parallax scrolling effect was achieved via jQuery developed by Jon Raasch (Raasch 2009). The jQuery is as follows:

```
$('#section[data-type="background"]').each(function(){
    var $bgobj = $(this); // assigning the object

    $(window).scroll(function() {
        var yPos = -$(window).scrollTop() / $bgobj.data('speed');

        // Put together our final background position
        var coords = '50% ' + yPos + 'px';

        // Move the background
        $bgobj.css({ backgroundColor: coords });
    });
});
```

This jQuery function working in concert with the following CSS declaration and HTML attributes achieves the parallax effect needed.

```
#div {
    background: url(../files/img/paul-brown-banner.jpg) 50% 0 repeat fixed;
}

<section id="div" class="banner_background" data-type="background" data-speed="10" >
</section>
```

An example of this may be found at <http://spec.lib.miamioh.edu/longform/cradle/>.

Image Fading Effects

In addition to the original Snow Fall application, one of our primary inspirations was Outside Online's *Lost on Everest* application (Outside 2013). As users scroll vertically through this feature, the images slowly fade into, and out of, view, creating a visually appealing effect.

This effect was the most challenging aspect of the project, but was made possible using jQuery to increase or decrease the opacity of the images as the user scrolled. Our goal was the fading effect to be dependent upon the user's behavior, so it was necessary to calculate the speed at which they were scrolling. This

speed would determine the amount at which the application would increase or decrease the opacity of the image. This jQuery code has been packaged up into a small plugin that developers can add to any element on a page (Michel 2014).

The jQuery plugin code for fading an image in as it comes into the viewport (in the interest of space the fading out section is not included here) is as follows:

```
//for each element(in this case image) do the following
$(self).each(function(index){
    var elem = $( this );
    var elem_offset = elem.offset();
    var elem_height = elem.height();
    var elem_height_half = (elem_height/2);

    // if location is greater than the top of the elem offset it means the elem is in the viewport
    and we can thus fade it in by incrementally adding to its css opacity
    if (location >= elem_offset.top && location < (elem_offset.top + elem_height +
        window_height)) {

    //begin code to fade in element
    //scroll speed is detected and rate at which element fades in changes based upon that decision
    if ((scrolltop - posWas) > 15) {
        var incrementer = 0.2;
    } else {
        var incrementer = 0.01;
    }
    var get_opacity = (elem.css("opacity") * 1);
    var set_opacity = get_opacity + incrementer;
    elem.css("opacity",set_opacity);
    }
}
```

Progress Bar

Another common aspect of this new class of web site design is a progress bar near the top or bottom of the page that advances horizontally from left to right as the user progresses through the document. It indicates to the user where they are in the document and how much more there is to view and read.

To achieve this effect, we used a jQuery library called Skrollr.js (Prinzhorn 2012). Using Skrollr.js is very straightforward, requiring only data attributes to be added to the affected div. Here is the relevant section of the HTML that hooks into Skrollr.js:

```
<div class="progress progress-danger progress-striped">  
<div id="progress" class="bar" data-0="width:0%;" data-end="width:100%;"></div>  
</div>
```

The shape, size and color of the progress bar was primarily achieved through Bootstrap's progress class as indicated here:

```
<div class="progress progress-danger progress-striped">
```

These classes create a rectangular progress bar that is primarily red with lighter red stripes. The data-0="width:0%;" data-end="width:100%;" attributes are telling Skrollr.js to smoothly increase the width of this element from 0% of the width of the screen to 100% once it reaches the end of the document.

Lightbox

Each image on the application will expand into a much larger, higher-resolution version upon click, using Lightbox for this effect (Dhakar 2015).

Hooking into the Lightbox library is very simple, requiring a similar addition of data attributes as Skrollr.js. Here is the relevant HTML:

```
<a href="files/img/paul-brown-playbook.jpg" data-lightbox="paul-brown-playbook" title="Paul  
Brown Playbook">  
  
</a>
```


Lightbox then triggers a quick animation of the image expanding to its larger version while darkening the content behind the image, allowing the user to focus on the image itself.

HTML5 Video

HTML5 Video is becoming the standard way to include video in web pages. YouTube recently announced they were abandoning Flash to adopt the new web standard (CNET 2015). The template we designed is built with HTML5, thus embedding video is very easy to do and ensures compatibility across browsers.

Here is the relevant code:

```
<video class="img-polaroid pull-left on_page" width="100%" poster="files/img/poster.png"
controls>
  <source src="files/media/reception-highlights.m4v" type="video/x-m4v">
  <source src="files/media/reception-highlights.webm" type="video/webm">
  Your browser does not support the <code>video</code> element.
</video>
```

Providing multiple file format alternatives will help ensure the user's browsers will support the video.

Mozilla Developer Network has a very good guide to the video element (Mozilla 2015).

Sliding Transparent Overlays

An additional effect inspired by Outside Online's *Lost on Everest* feature was a sliding transparent overlay that provides additional information. Outside Online used the effect to display biographical information of the climbers involved in the story. We employ this effect for the same ends.

When a user moves their mouse over an image, a red transparent “box” slides up from the bottom of the image and covers the image completely. This transparent “box” contains text for the user to read. The first step was to define the style of the box or overlay, which was done in CSS:

```
.img_overlay{
display:none;
position: relative;
border-top:1px solid #000;
border-right:2px solid #000;
border-left:2px solid #000;
left: 0;
background:rgba(195,48,48,0.90);
}
```

Once the CSS is defined for the overlay, the HTML where this effect would appear is as follows:

```
<div class="overlay">

<div class="img_overlay">
<h4>Bill Narduzzi</h4><p>Biographical text goes here.</p>
</div>
</div>
```

Finally, jQuery was used to initiate the effect:

```
$('#img.image_overlay').load(function() {
var div_width = $('#img.image_overlay').width();
var div_height = $('#img.image_overlay').height();

$('#div.overlay').width(div_width);
$('#div.overlay').height(div_height);
$('.img_overlay').height(div_height);
$('.img_overlay').css("bottom",div_height);

$('#div.overlay').mouseenter(function () {
    $('.img_overlay').show("slide",{ direction : "down" },150);
});
$('#div.overlay').mouseleave(function () {
    $('.img_overlay').hide("slide",{direction : "down" },150);
});
});
```

Future Enhancements

There are several enhancements that we intend to make in the future. The first of which is to modify the applications into Responsive applications. The JavaScript involved in the parallax effect as well as the

sliding overlays make it trickier than just turning on the responsive helpers that come standard with Bootstrap. Making this application Responsive may mean loading more than one version in the browser. Secondly, we'd like to introduce CSS classes for styling larger pull quotes for notable pieces of text. Finally we plan on overlaying the template with a basic administrative interface that will enable librarians and developers to input the text and images without touching any code.

Conclusion

Examples of longform pages using this code may be found on the Digital Storytelling Projects page¹³ on the [Unique Named] Special Collections website. Each of these pages is based off an exhibit organized in Special Collections beginning in Fall 2013, documenting each physical exhibit after it has been taken down. Currently all three use the same basic structure with minor modifications to fit the needs of each exhibit. In addition to retaining the narrative structure of the physical exhibits long after they have been replaced, the longform pages also present the materials held in Special Collections in a way that mirrors a format that has become increasingly popular in news and entertainment online. By developing a platform that presents a story in the same way as by websites such as the *Atlantic* (Coates 2014), *Mashable* (Wild 2015), and the *New York Times*' groundbreaking "Snow Fall" (Branch 2012), we are seeking to adapt to the expectations of our modern users. As libraries continue to look for new and innovative ways to connect with patrons, getting their attention in a familiar and eye-catching format can help quickly draw them in, and the expanded narrative can engage them with the collection.

There are some already existing applications in place, such as Storyform and Medium, which allows the creation of long form style narratives, but the homegrown code described in this paper allows for significantly greater customization than established applications. In addition to the innovative style of the end product, the code developed to create the longform webpages relies on simple, commonly accessible tools - HTML5, JavaScript, jQuery, and Bootstrap. This creates a prepackaged set of code that can be

¹³ <http://spec.lib.miamioh.edu/home/digital-storytelling-projects/>

understood and used by anyone with knowledge of website development. We encourage all readers to experiment with this new format (Michel 2015).

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