

Spirals of Meaning: Exploring Nonlinearity through Prezi's Infinite Canvas

“Death by PowerPoint” is a familiar complaint at conferences, where slides filled with endless bullet points swoosh past without offering meaningful content, plodding from frame to frame with only animations to connect them. But these linear presentations are in some venues being displaced by new presentation tools that offer alternative visual metaphors for sharing ideas. One of these, Prezi, allows for the juxtaposition of images, text, and other media on a telescoping canvas that relies on linear paths for exploring nonlinear content. There's a notable difference between the two interfaces, as Powerpoint essentially offers an enhanced version of projector slides, while Prezi is built on context: "what you see in micro detail is always part of what exists in macro form, and on the same 'slide'; thus it is always available"(Brindley xiii). With its use of a single constant space for creativity, Prezi acts an infinite canvas, recalling Scott McCloud's model for a future of sequential art on the web defined not by pages but by the screen as portal to an expanding and linked storyspace, allowing for continual layering of meaning and data. This creates not merely a linear presentation space but also an explorable space for a user to move through at their own pace, with affordances for what Henry Jenkins describes as environmental storytelling—an approach common to video games and theme parks, but not previously typical of presentations. But the implications of this tool, and its acceptance as a common platform for sharing interlinked, highly visual ideas, has potential consequences beyond the conference hall. It owes a debt to predecessors in comics and electronic literature, and is beginning to be used as a tool for building or prototyping works in these genres.

In 2009, when Prezi was first introduced, it was very limited: it allowed for importing graphics, video, and text in a pre-themed canvas and building a path to move between “frames,” or screen-like nodes within the canvas. Over the past few years extensions to the interface support adding animation, 3D background effects, sound, and stylesheets. Despite its marketing as a presentation tool it has since been co-opted as a broader tool for creating content and even storytelling. Scott McCloud observed its potential the moment it appeared in a blog post, commenting “Prezi may be part of a general trend towards continuous-space navigation in communication and the arts. If that’s the case, I hope comics will be a part of that trend” (Prezi + Webcomics). Several years later, we are beginning to witness some of the significance of that trend, particularly in experimental works.

There is no universal platform for electronic literature: often, works rely upon custom-built interfaces, generated specifically for the project and making use of Flash, HTML5, JavaScript, and other production tools (primarily but not necessarily web-based). However, some platforms have empowered creative communities, such as Inform 7 and interactive fiction and Hypercard and its descendants. A platform with affordances that encourage the creation of narratives that break with traditional linearity and expectations of space has the potential to empower a broader base of creative experimentation, as we are currently witnessing with the Twine “revolution,” with an increase in the development of personal text-based games using the free visual editor. Anna Anthropy describes the importance of accessibility of development tools to the diversity of creative output: “people have really adopted Twine, which is a free tool for making text games. And aside from being free, it's really not programming at all – if you can write a story, you can make a Twine game. A lot of people have been making all this weird amazing stuff. Someone made a Twine game, In Memoriam, for his dead brother. Someone

made a Twine game about what it's like to come out as bi in a lesbian community and be re-closeted” (Ellison). Like Twine, Prezi is free (although for unrestricted use, a premium is charged), and involves no programming. The re-purposing of accessible tools such as this for the creation of new forms of storytelling helps encourage a broader range of participants in the form.

I'll examine Prezi's implementation of Scott McCloud's concept of the infinite canvas alongside notable explorations of that modality in sequential art. A similar limited model of the expanding canvas is used in Jason Shiga's *Meanwhile*, a work whose digital iPad form more clearly conveys the extent of its connected and intertwined threads than the pages of its corresponding codex can contain. In considering the evolution of text within electronic literature, the nonlinear and interactive natures of a work often make even the most textual of electronic literature defy easy translation to printed codex. There are a couple examples of Prezi use already in electronic literature, including Alexandra Saemmer's layered poetics. Such co-opting of a presentation platform for storytelling reveals the fundamental transformations of procedural expectations and linked structures in online spaces: the co-location and linking of ideas to create meaning is now a matter of course. I'll examine the born-digital textuality in these works, and suggest how we can see the impact of evolving conceptions of meaning in web spaces on electronic literature (and vice versa) through probing at the construction of text through rejection of the page.

The Infinite Canvas and Comics

When Scott McCloud first speculated on the future of born-digital comics in 2000, he suggested that the metaphor of the page was due to be abandoned: web comics could instead make use of the screen as a portal for viewing an “infinite canvas,” where storytelling might move in any direction with no physical boundaries (200). Scott McCloud's proposal of the

infinite canvas as a mode for “born-digital” comics didn’t change the fact that most webcomics are still formatted with the page in mind. Thus the concept at first seemed to be a design paradigm without an audience. In reviewing Scott McCloud’s theories in a practical guide for webcomic artists in 2009, El Santo noted “The web has evolved differently from what McCloud expected. A scrollable page...is too much information at once in a medium that’s drowning in it.” Scott McCloud countered that as of February 2009, authoring environments were still unsuited to this type of form, but the iPhone and its touch-driven successors offered hope for the future: “If implemented with the kind of seamless motion seen in multiple prototypes over the years, we may finally leave the clumsy world of scroll bars behind for good. Traditional scrolling’s tiny buttons and jerky refresh rate have made navigating extended canvases created in HTML distracting and even painful to look at” (The Infinite Canvas). Examples of these types of HTML-driven comics include Emily Carroll’s “His Face All Red” (2010), which primarily uses vertical scrolling and the black space of the background to tell a story of two brothers who hunt for a wolf. Similarly, Drew Weing’s “‘Pup’ Ponders the Heat Death of the Universe” uses both vertical and horizontal space to move through the scale of Pup’s contemplations as his vision takes him above the sun and beyond.

More recent comics avoid the interface problem by using a draggable interface. The XKCD “Click and Drag” webcomic posted by Randall Munroe on September 19, 2012 seems to offer everything Scott McCloud described. However, it is perhaps more reminiscent of Scott McCloud’s discussion of the misconceptions many have about the infinite canvas concept: “I’m not suggesting for a moment that daily gag-strip artists start creating 40-foot tall staircase-shaped cascading storylines. Comics strips work fine online and have been one of our biggest success stories of the last decade. They don’t need any help from mad scientists” (The Infinite Canvas).

Randall Munroe's "Click and Drag" is, according to Dan Catt, around 46 feet if printed at 300 dpi—but it does have a smooth, mostly invisible interface through a frame embedded in the page. The work is not zoomable inherently, although it does lend itself to a scaling poetics. One programmer re-interpreted it through the Google Maps interface, adding the ability to move in and out of the canvas as if it was a traditionally visualized geographic space (Robert). This adaptation more closely resembles the ideals of the infinite canvas, as the addition of zooming makes it possible to appreciate more of the whole rather than continuously experiencing the image only as fragments.

Jason Shiga's *Meanwhile* is an infinite canvas *Choose Your Own Adventure*-style comic that began as a printed codex. The challenge of realizing it in print given the interlinking physicality of the interface was daunting: as Andrew Plotkin, who built the iOS version, describes: "*Meanwhile* began as a series of seven increasingly complex flowcharts. Once the outline of the story was structured, a computer algorithm determined the most efficient way to transfer it to book form, using a system of tabs to interlink the panels and pages. The problem proved to be NP-complete; it was finally cracked in spring of 2000, with the aid of a V-opt heuristic algorithm which ran for twelve hours on an SGI machine." The iOS version takes the full story map and makes it visible, allowing the reader to see the networking, overlapping, and complexity of the choices that stem from a first decision between chocolate and vanilla ice cream and quickly move into time travel and other unexpected twists. The interface was custom-built, but the overall navigation resembles Prezi's motion. The choice of release platform is also important: the iPad's multi-touch affordances make it a more natural home for this type of experience than the scrollbars of HTML could ever provide. This comic might have been born for print, but it exemplifies the infinite canvas.

Prezi and Electronic Literature

Born-digital comics might fall under the umbrella of electronic literature, but the range of experimentation with Prezi brings in media that move beyond sequential art. Such works fall in line with the four characteristics of a digital text offered by N. Katherine Hayles: layering, multimodal, the separation of code from performance or interface, and a fracturing or nonlinearity of time. Prezi's ease of delivering these elements makes it a natural home for presentations examining the conventions of electronic literature, as demonstrated by R. Lyle Skains's Prezi on "Fluid Texts: Implicit Collaboration in Electronic Literatures." The resulting presentation is itself a fluid text in motion, inherently "collaborative" in its materiality. As Skains observes, multimodal narrative composition can often involve a process of "surf-sample-manipulate"—the same type of "playgicism" that Prezi encourages through offering the ability to share any Prezi for reuse and remixing by another user. The desire to remix is already embedded in the interface: tools allow for quickly pulling in images directly from Google searches and videos from Youtube. These interface elements are not unique to Prezi, and even Prezi's most distinct features have appeared previously in electronic literature—Prezi simply packages them in a more accessible manner.

Most notably, the "zooming" aesthetics Prezi relies upon appear in electronic literature that appeared well before this particular interface emerged, as Leonardo Flores notes in his examination of "FaceDown" by Andy Campbell, which uses the zooming alongside metaphors of scale mapped onto a human face. As Flores observes, "this interface turns the reader into a kind of detective, examining this image for clues, texts, and insight on this emotional wreck of a speaker." The aesthetic of zooming also appears in a very literal, physical context in the work of Zuzana Husarova, "Any Vision", which moves through poetry placed at the microscopic level

and thus physically creates what Prezi only simulates. The work is experienced as a video, so the user has no control over the motion, instead experiencing someone else's gaze as an interface to the typically unseeable. In "Moving Through Me as I Move," Stephanie Strickland describes the power of zooming as an interface:

Scale is elided on the Web, as it is in the stenographer's practice, where events in the conference room, in her brain, in her hand, and on her code-filled writing machine are nearly simultaneous. Many different scales can be present to the same screen, as if they belonged together, as if they cohered there as "naturally" as they do in the stenographer's body. But a change in scale is a change of context: the view/read cusp will shift differently for zoomed text than it will for text that is panned. In fact, this kind of zoom or scale-changing cusp may be a particularly important one in a world where we are asked to process simultaneously scales from the nano to the cosmic.

Several works of "zooming" electronic literature have already been produced with Prezi. Mark Marino's "what the nightwoman texted" (2010) uses Prezi for a purpose it already well-accommodates, the rearrangement and mashing together of existing material to form something new and explorable. The physical act of layering by its nature remixes the framing of a text or image, a juxtaposition Marino works with here to create the feeling of moving through several works tied together in a spatial plane. The work clearly reflects the early affordances of the Prezi platform, which limited the choices of fonts and color schemes to a small selection and thus constrain some of the final aesthetics (here, most notable in a sky-blue gradient background.) The illusion of the zooming changes the reader's perception of the work's scale and focus, as at its most zoomed out the reader can only make out a few passages over a drawing of a woman alongside the words "She tested my ear, whispering/let us go/you and I." The remix is at the center of this work: as Leonardo Flores comments, "follow the path Marino has traced through this landscape to discover an act of writing that required very little typing from him but feels like something greater than the sum of its parts." The path is another construction of Prezi—a way to create a linear movement through a nonlinear space, using frames that imitate slides by focusing

on one piece of the whole. However, the reader can follow in the footsteps of Little Red Riding Hood and stray from the path to discover what lies beyond.

As Prezi's affordances have been extended, the materiality of this remix has likewise grown. Alexandra Saemmer's "Böhmische Dörfe" (2011) depicts evacuation with the animation of the march moving behind the text, keeping a constant motion alongside the motion the viewer takes while following a path through the space. The fracturing of time occurs through the breaking of language alongside the animation, and at some levels of zooming the motion becomes visual noise—the pacing still clear, but the actions blurred. I have likewise used zooming for my own experiment with Prezi, "A View from Within," a comic depiction of a single moment experienced from the personal to the universal scale, and back again.





Figure 1 A sequence from View from Within (Salter, 2013) at three scales, viewed within Prezi

Prezi's acceptance of transparent images makes it possible to build such a sequence from individual images (in this case, hundreds of hand-drawn illustrations all viewed as if at one scale, and thus incapable of forming a coherent scaling scene without a zooming digital framework.) In these cases, the infinite canvas does not resemble the panel-based methods of sequential art: the space in-between, along, and outside the path are as or more essential than the linear chain of nodes. For "A View from Within," I explored Prezi's constraints to find the ends of the infinite, and used every scale from the most finite and "zoomed in" to the most zoomed out permissible.

Prezi can also be used as a means to create external electronic literature. In "Bedtime – A Case Study on Distorted Memory", "chapstickbomber" (a student in Alan Levine's ds106 in spring 2012) used Prezi to create a recursive zooming video of a two-camera view into an endless walk. The limitations of Prezi's zoom were also a constraint in this project: "Since Prezi has only limited zoom depth, only about 5-6 levels can be done per stack, then when you reach the bottom, you slide back out to another stack that starts with the same image you just ended on and continue zooming" (chapstickbomber). This is just one example of how Prezi can be extended. Kimon Keramidas noted that Prezi is "hackable" as a broader "digital canvas" once the expectations of a presentation are abandoned, and new spirals of meaning constructed.

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