No Borders, No Limits: The Infinite Canvas as a Storytelling Tool in Online Comics

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Abstract

The World Wide Web provides a viable publishing medium for amateur comics creators, without censorship or pressure to make one's work fit a particular market. The flexibility of a digital presentation allows comics creators to tell stories more effectively through the "infinite canvas" technique. In my own work, I have used the results of other creators' experiments to tell my own unique story in a way that would be difficult or impossible to replicate in print. The medium of HTML still limits how a web-based comic can be presented, but recent experiments with Flash and Java programming are beginning to break down those barriers.

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No Borders, No Limits: The Infinite Canvas as a Storytelling Tool in Online Comics

Introduction: Why a webcomic, and why this webcomic?

It is only recently that scholars have begun to take comics seriously as an art form and a storytelling medium. As Scott McCloud notes in *Reinventing Comics*, the basic form of comics is an idea as old or older than the written word: "the idea of placing one picture after another to show the passage of time" (1). This simple conceit has been used for everything from elaborate fantasy (e.g. Neil Gaiman's *Sandman* or Miyazaki's *Nausicaa*) to hard-hitting journalism (Joe Sacco's *Palestine*) to soul-searching autobiography (Art Spiegelman's *Maus*, Harvey Pekar's *American Splendor*), as well as many works which defy easy categorization. The general public, on the other hand, still tends to think of comics as either musclebound men in tights or funny animals in the Sunday paper—because that is all they are exposed to in the mainstream media. There is little motivation for the average consumer to seek out innovative comics to read, and thus the "alternative" comics industry has never achieved much monetary success. This, in turn, makes would-be comics creators hesitant to publish their work, knowing that they have a very limited audience and little chance of seeing any returns for their efforts.

The rise of the World Wide Web, on the other hand, has provided a new and powerful publishing tool for creators of all sorts, including comics artists. The Web breaks down the various barriers inherent in print publishing, and allows comics creators to connect directly with their readers and push the medium to its limits and beyond. However, few current webcomics creators are taking advantage of the possibilities afforded by the flexibility of an all-digital presentation. Most online comics follow the conventions of their printed counterparts, sometimes to the detriment of the story or art. The media of HTML, Flash, Java, and other web technologies have the potential to expand the storytelling capacities of sequential art. In the following pages, I will show how a small minority of artists have made use of the web's unique

properties in their comics, and how my own webcomic, *Work in Progress*, builds upon that foundation.

The Advantages of Web Distribution

Webcomics are a rapidly expanding industry and art from. As of this writing, there are more than 7,000 amateur webcomics hosted on the free hosting service Keenspace, with more signing up on a daily basis. What is the appeal of publishing a comic online that makes so many artists eager to try it?

Perhaps the most important benefit of publishing online is the potential audience the web provides. Even the best and most appealing print comic caters to a very limited audience; less than 0.1% of the population of North America reads print comics on a regular basis (McCloud, *Reinventing* 97). What's more, in order to read those comics, one must generally go to a specialty store that sells them—and anyone who is not already a comics reader is unlikely to enter such a store and give the medium a try. In recent years, the popularity of comics (particularly imported *manga* titles from Japan) has grown to the point where comic books are featured prominently in chain bookstores. However, comics are almost always relegated to their own section, separated from "normal" literature. In short, printed comics will most likely be read only by the small percentage of the population who make a serious effort to seek them out.

Content published on the web, on the other hand, is not limited to a particular store or area; it is, theoretically, accessible to anyone with a search engine, regardless of one's location. Thus, it is possible for web surfers who would *not* ordinarily read comics to discover a particular comic based purely on its subject matter. In "The 99.9% Solution," Scott McCloud describes his own experience with that very phenomenon. On his website is an autobiographical comic entitled *My Obsession With Chess*, describing his love affair with the game through his childhood and adolescence. Much to McCloud's surprise, many of the people who read this piece were "non-comics reading chess players" who had found the comic through a search engine or outside

links. If McCloud had published *My Obsession with Chess* in print, those readers would likely have never found it, or even thought to look for such a thing. Online, on the other hand, chess enthusiasts were able to not only find the comic, but develop an interest in comics in general based on reading this particular work. In print, artists have to struggle to find their target market; online, the market will find *you* (ICST #2).

Another advantage of publishing online is having full creative control of one's work. With vanishingly rare exceptions, any formally published work must go through the filter of an editor who tries to make the work palatable and marketable to a general audience. When one self-publishes, however, one can be sure that the work will be presented exactly as the creator wanted it, because the creator and the presenter are the same person. Webcomics can, and frequently do, dive into much more controversial territory than their print counterparts would allow. Comics such as Erin Lindsey's *Venus Envy* (Fig. 1) and Sandra Fuhr's *Boy Meets Boy* examine alternate lifestyles with self-deprecating humor and gut-wrenching honesty. In the storyline "The Forbidden Game," Ian McDonald's *Bruno the Bandit* uses chess to satirize

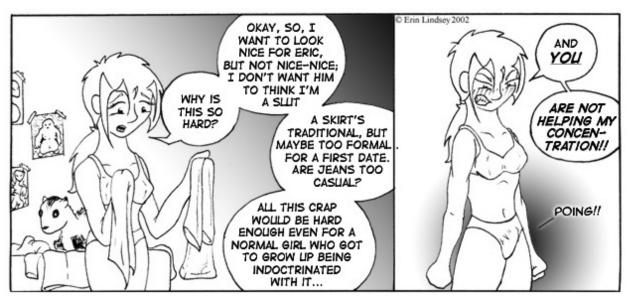


Fig. 1. Erin Lindsey, Venus Envy comic for 11 December 2002. 24 April 2005 http://venusenvy.keenspace.com.



Fig. 2. Ian MacDonald, Bruno the Bandit comic for 23 July 1999. 24 April 2005 http://www.brunothebandit.com.

American culture's obsession with sexuality (Fig. 2). Such comics would be unlikely to find a receptive audience in print, and would never have a chance of appearing in a mainstream newspaper.

Of course, there are also substantial disadvantages to being one's own editor. Without the benefit of an external editor, there is nothing to keep one from publishing works containing typographical errors, bad spelling or grammar, false information, or just poor writing and art. However, while those who self-publish online may not have an official editor, there is still a powerful editorial body which influences their work: the viewing public.

The Internet is not merely a means of distributing information or ideas from a given source; it is a means of communication between people. Email, instant messaging, and discussion boards allow people all over the world to talk to one another with unprecedented speed and simplicity. Thus, one who publishes material on the Internet can see an *immediate* response to his or her efforts. In his self-published article "Webcomics for Fun and Breaking Even," *Diesel Sweeties* creator R. Stevens claims that this connection between reader and creator is one of the most important aspects of web comics. "My whole livelihood as a cartoonist is based on the goodwill of my readers," he writes. "We are a small enough medium to pay attention to those who care enough to contact us....Listen to them. They want you to succeed."

The Infinite Canvas and the "Trails" System

Clearly, the web has advantages over print in terms of distribution. However, the unique attributes of the web allow the medium of webcomics itself to be dramatically different from its print counterpart. Digital production methods are commonplace in modern comics, but when a comic is both produced and presented digitally, it can take advantage of the medium to a much higher degree.

The most prominent example is what Scott McCloud calls the "infinite canvas" (*Reinventing* 200). When a comic is published in book form, it is divided up into rectangular pages, each of the same size and shape. The artist is forced to make his or her work conform to the shape of the page, often compromising the story or the art as a result. Initially, one might think that web comics are even more limited in this respect. After all, the shape of the monitor is fixed and unchangeable, and monitors currently only come in two different "sizes": standard, with a 3:4 aspect ratio, and widescreen, with a 9:16 aspect ratio. Interface designers are generally encouraged to treat the computer screen as a single page, and keep all information within those limits. McCloud, however, has a different idea: instead of treating the monitor as a page, treat it as a *window* through which one can observe a larger space (222). Instead of being stuck in a small rectangle, a web comic may trail off the side or the bottom of the screen, inviting the viewer to scroll over and view more content which isn't visible in the current "window."

Naturally, the first person to make significant use of the "infinite canvas" concept was Scott McCloud himself. His first webcomic experiment, an adaptation of the Robert Browning poem "Porphyria's Lover," is a six-foot vertical scroll, with panels arranged at different intervals to echo the rhyme scheme of the poem (Fig. 4). To help readers puzzle out the unusual layout, the panels are connected together with lines, which the reader can follow, flowchart-style, to read the comic in the proper sequence. This worked so well that McCloud has used these lines, which he called "trails," in virtually every one of his webcomics since then.

Many other webcomics creators have followed in McCloud's footsteps, creating their

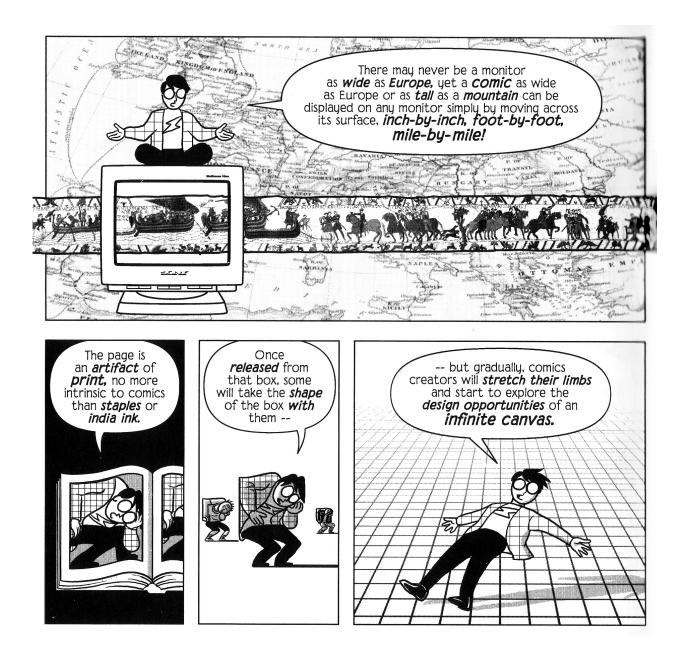


Fig. 3 Scott McCloud, excerpt from Reinventing Comics. New York: Paradox Press, 2000.

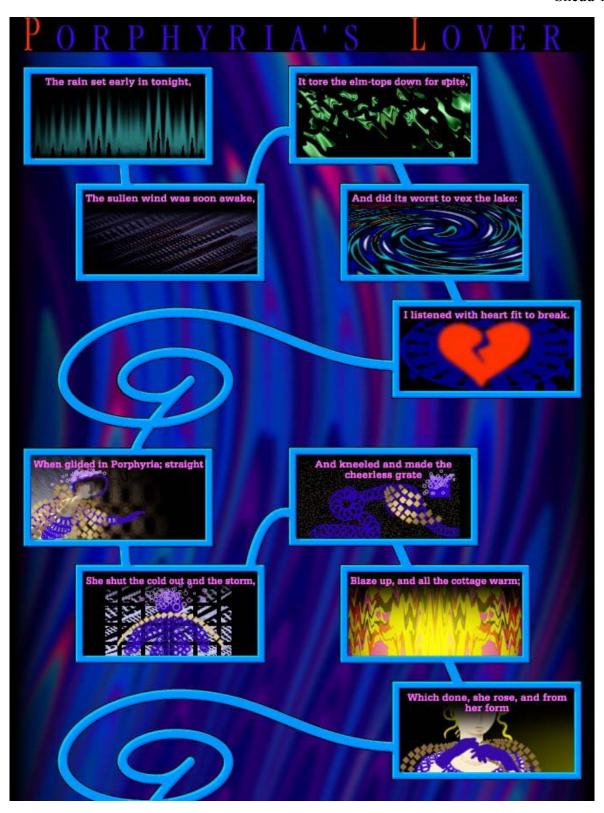


Fig. 4. Scott McCloud, excerpt from *Porphyria's Lover.* 1998. 20 October 2004 http://www.scottmccloud.com/comics/porphyria/index.html.

own infinite canvas comics, with or without trails connecting the panels. Frank "Damonk" Cormier's *Framed!!!* takes place in the literal space of the web page, and the panels wander around the space just as the characters do. The Swiss designer known as "demian5" uses long horizontal scrolls to convey a sense of space and rhythm in *When I Am King*. In my own comic, *Work in Progress*, I have taken a more middle-of-the-road approach. The story is relatively ordinary (for a science-fiction piece), but I have made use of the techniques of the infinite canvas in order to tell it in the most complete way possible.

My Approach: a Step-by-Step Analysis

When one initially links to the first installment of *Work in Progress*, the only things visible are the chapter title and a line of footprints leading off the right edge of the screen. As one scrolls right, more details become apparent: the white space of the page is actually a heavy snowstorm, and the footprints belong to our heroine, Lynn DeMarco, who is walking up to the front of a building (Fig. 5). This is an example of what McCloud calls *gradualism*—slowly gaining information by slowly scrolling through an image or sequence of images (ICST #4). McCloud first uses gradualism in *Zot! Online* #3, with a six-foot-tall panel showing the central characters falling from several hundred feet in the air (Fig. 6). The huge, blank panel conveys a sense of the length (in both space and time) of their fall, and thereby raises the stakes in the viewer's mind. Demian5 uses gradualism many times in *When I Am King*, to convey both the physical space of the setting and the metaphorical "space" of the character's dreams (Fig. 7). In

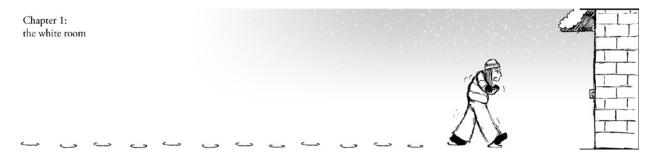


Fig. 5. Alycia Shedd, Work in Progress Chapter 1, part 1, panel 1. 2005.

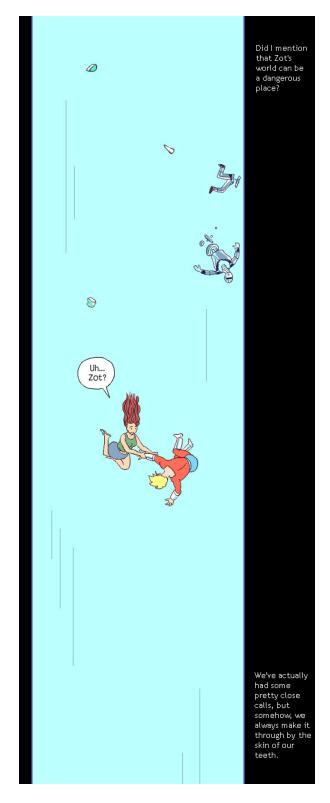


Fig. 6. Scott McCloud, excerpt from *Zot! Online:* "Hearts and Minds" part 3. 2000. 24 April 2005 http://www.scottmccloud.com>.



Fig. 7. demian5, excerpt from *When I Am King* Chapter 4. 2001. 24 April 2005 http://www.demian5.com.

the case of my comic, the gradual reveal conveys the length of time and space that Lynn has just walked through, and prepares the reader for the shifts in space which will occur later in the comic.

When Lynn "arrives" at the building, the comic abruptly shifts to a vertical scroll of near-identical panels showing Lynn waiting for her friend to open the door (Fig. 8). This is a common technique in print comics (made easier here with the cut-and-paste capabilities of Photoshop), but the uninterrupted scroll helps to convey the tedium of waiting.

The comic again shifts to a horizontal scroll as Lynn walks inside, and to a vertical bottom-to-top scroll when Dave drags her out of the lobby (Fig. 9). The movement up the page makes logical sense, as they're going up in an elevator; however, it's extremely non-intuitive for most people, so we see an elevator button pointing upward to guide the viewer along.

Right-angle turns will occur at key moments in the storyline:

Dave's enigmatic statement at the top of the elevator, the first encounter with Virgil, and the beginning and end of Lynn's whirlwind tour of Yumeji, for example. These abrupt directional shifts (which are all but impossible in a printed comic) prevent one from seeing the new panel right away, and thus serve to "keep the reader off-guard, never knowing what to expect around the next corner" (McCloud, *Reinventing* 227).

Dramatic or suspenseful events in a story are often referred to as "plot twists," "pivotal moments," or "unexpected turns"; in an infinite canvas comic, we can turn this metaphor into a literal change in direction.

Fig. 8. Alycia Shedd, Work in Progress Chapter 1, part 1, panels 2-7. 2005.





Fig. 9. Alycia Shedd, Work in Progress Chapter 1, part 1, panels 8–10. 2005.

Not all directional changes indicate a plot twist, however. When Dave is explaining the technology of Yumeji to Lynn, the panels are staggered in a zig-zag pattern (Fig. 10). This back-and-forth motion suggests an exchange of dialogue or ideas, and comes to an end when the explanation ceases and Lynn is forced to make a decision. Her decision is, "Cool! I'm in!"

Immediately afterwards, one sees another way of indicating a scene change: an unusually long trail which requires more scrolling to see the next segment (Fig. 11). In this case, the greater length of the line also indicates a greater length of time between events. As McCloud notes in *Understanding Comics*, in a comic, time and space are one and the same, and thus "length" can refer to one or the other—or both (102).

The remainder of Part 1 consists of progressively tighter shots of Lynn sitting in the VR chair. As the shots get closer, the panels get smaller, until all one sees is Lynn's closed eye in a tiny square (Fig. 12). The extreme close-up increases the tension—what will happen when the machine is turned on? The final panel is an even tinier box containing a single word: >click<. This box is actually not an image, but a miniature table with a link to the next installment of the comic.

In the opening of Part 2, one is greeted by an unexpected surprise: the introduction of color (Fig. 13). The dichotomy between reality and virtual reality is immediately clear; reality is in black and white while Yumeji is in computer-created color. In a reversal of the end of Part 1, the panels gradually get larger, revealing Lynn's virtual self standing in a featureless white space.

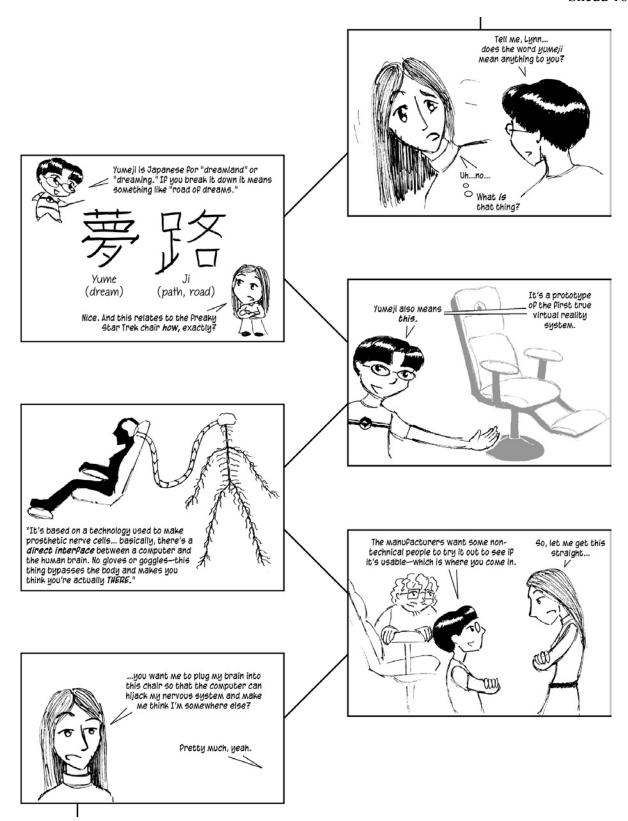


Fig. 10. Alycia Shedd, Work in Progress Chapter 1, part 1, panels 15-20. 2005.

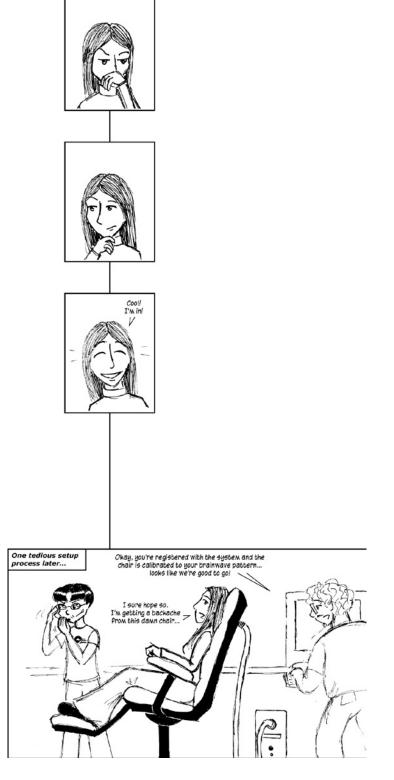


Fig. 11. Alycia Shedd, *Work in Progress* Chapter 1, part 1, panels 21–24. 2005.

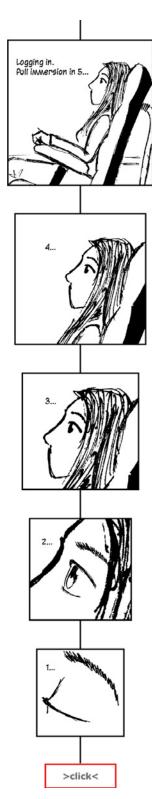
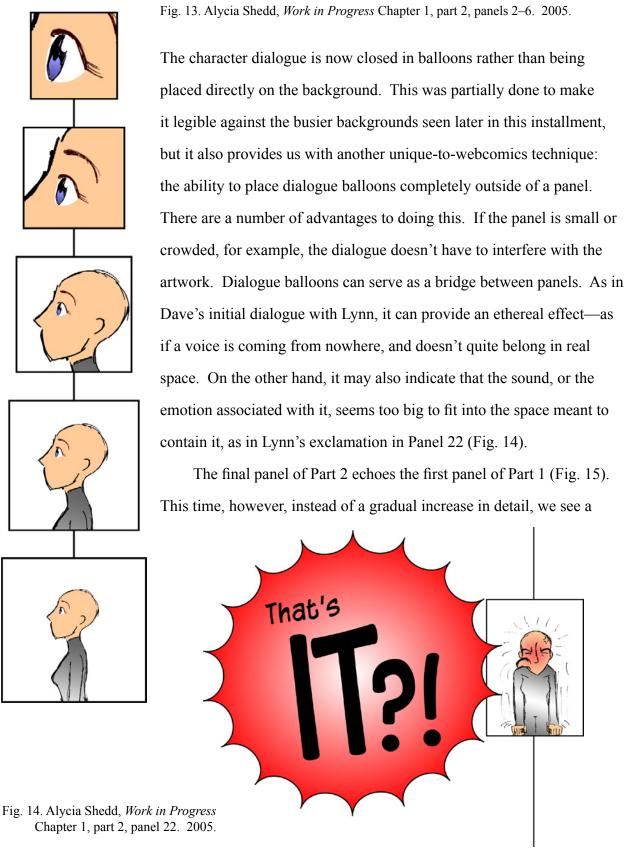


Fig. 12. Alycia Shedd, *Work in Progress* Chapter 1, part 1, panels 26–31. 2005.



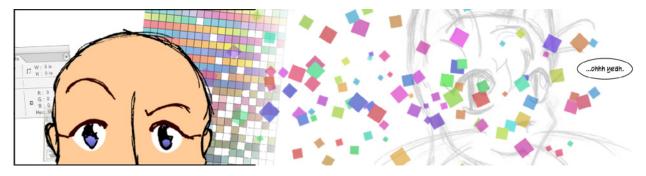


Fig. 15. Alycia Shedd, Work in Progress Chapter 1, part 2, panel 31. 2005.

gradual decrease as the palettes break up into floating colored squares, vague imagined images and then empty space—infinite space, infinite possibilities for what will come next.

User Response

The visual format of *Work in Progress* is taken directly from Scott McCloud's example: a scrolling comic with trails linking each panel to the next. However, rather than confining myself to a vertical format, I allowed the comic to wander into space in all directions as the story required. This gave me a larger space in which to work, and the trails between panels would presumably keep people from getting lost. In practice, however, the infinite canvas proved to be not quite as intuitive as I had expected.

On the opening night of my BFA thesis exhibit, patrons were invited to read Part 1 of the comic either in physical form on the gallery wall, or in digital form (along with Part 2) on one of two computers. From my observations, everyone in the gallery was able to follow the comic on the wall. The digital version, however, was not as easy to read. Users found it frustrating to switch back and forth between the horizontal and vertical scroll bars in order to follow the comic. Some users were unable to find the trail to the next panel, and consequently left off in the middle of the page. In general, people found the storyline and artwork interesting, but the layout was complicated and confusing, and thus detracted from the users' enjoyment of the comic.

In retrospect, it seems that webcomics work better when they scroll on only a single axis.

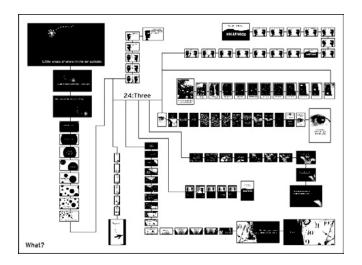
Most of McCloud's trails comics are vertical scrolls; damien5's *When I Am King* is primarily a horizontal scroll. What's more, the large tables necessary to lay out such a comic may not be compatible with all web browsers; Part 2 of *Work in Progress* caused Firefox to run unusually slowly.

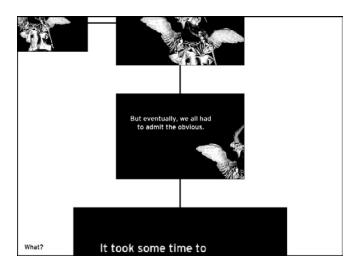
The infinite canvas approach allows for extremely versatile storytelling, but the conventions of HTML limit how far that versatility can be taken. However, there are alternatives in the works which will hopefully allow comics to overcome those limitations.

Tarquin Engine and Infinite Canvas.app

Two different developers, Daniel Merlin Goodbrey and Markus Müller, are taking webcomics media to the next level by creating software specifically designed for the creation and presentation of digital comics. Goodbrey's Flash-based "Tarquin Engine" is designed to simplify the presentation of infinite canvas comics. At each step of navigation, the Tarquin Engine viewer centers on a single panel of the comic, showing hints of the other panels which are connected via trails. With the aid of cursor cues, the viewer is able to click and move on to any connected panel, or zoom out and view the entire comic as a whole (Fig. 16). Although the Tarquin Engine is still in the experimental stage, Goodbrey has used it for several of his own comics, and Scott McCloud has borrowed the technology for a comic entitled *Mimi's Last Coffee*. Goodbrey is working on a more polished version of the Tarquin Engine, which he hopes to make available to the public sometime in the near future.

Markus Müller's freeware comics application, appropriately named "Infinite Canvas," is a Java-based solution to the same problem. The artist imports panels made in a graphics program, then connects them together with trails and defines how the user will move between them. Infinite Canvas is less flexible than the Tarquin Engine, but much more user-friendly (for now, at least). Software solutions such as these may be the beginning of webcomics' move away from the limitations of HTML into a format unto themselves.





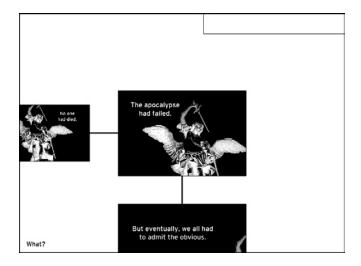


Fig. 16. Daniel Merlin Goodbrey, excerpts from *24: Three*. 2005. 25 April 2005 http://www.e-merl.com>.

Conclusion: Form versus Content in Webcomics

In general, webcomics can be split into two categories: form-based and content-based. The goal of a form-based comic is primarily to showcase what can be done with comics on the web; as such, the *form* of the comic is first and foremost in the artist's mind. Unfortunately, this often comes at the expense of telling an interesting or compelling story. Many of Daniel Merlin Goodbrey's "hypercomics," for example, are exercises in form with little or no "story" supporting them.

In other cases, the comic has a strong story, but the creator's use of an unusual format keeps that story from being fully appreciated. Take, for example, Scott McCloud's Flash-based comic *The Right Number*. The story is a first-person account of a young man who, after a series of peculiar relationships, comes to the conclusion that phone numbers and personality traits are interconnected, and devotes his life to finding the number of the perfect woman. The comic itself makes use of a technique McCloud suggested in *Reinventing Comics*, in which each panel is actually embedded in the previous one, in order to "create a sense of diving deeper into the story" (227). One only sees a single panel or small set of panels at a time, and "turning the page" actually zooms in on the image to present the next set of panels (Fig. 17). Unfortunately, this





Fig. 17. Scott McCloud, excerpts from *The Right Number* part 1. 2004. 25 April 2005 http://www.scottmccloud.com>.

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technique, while interesting, is a bit awkward in practice. While the scaling system prevents one from "reading ahead" in the comic, the next panel is always there, sitting awkwardly in the center of the current panel, usually without any connection to the existing scene. Furthermore, one questions whether a fancy Flash presentation is even necessary for a simple black-and-white comic—couldn't it just as easily be presented in a simpler, less bandwidth-intensive format? As of this writing, *The Right Number* is still incomplete, so it's difficult to judge, but I personally feel that McCloud could forego the Flash presentation and the comic would be better for it.

The vast majority of webcomics, on the other hand, can be considered "content-based." Rather than experimenting with fancy formatting, the creators of these comics focus their energy on the art and story. As such, content-based comics tend to come in very traditional formats, presented one strip or page at a time on the computer screen. For these artists, the web is not a medium so much as a means of distribution—a way to get their work to the largest possible audience in the simplest possible way. If the opportunity arose to publish their work in print, they could do so with relative ease (and many of the most talented webcomic artists have already done so).

It is not my intention to denigrate either form- or content-based webcomics, or their creators. There is nothing wrong with using tried-and-true methods to tell a story, nor with using experimental works to push the limits of the medium. However, I feel that the time has come to put the techniques of the form-based comics into practice—to use them in the *service* of a story rather than as an end in themselves. My goal, which I believe I have accomplished with *Work in Progress*, is to combine form and content into a well-made, well-written comic which can only be presented in the medium of the World Wide Web.

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Framed!!! is a highly experimental daily comic series, in which a group of ordinary people find themselves trapped inside a comic strip for the amusement of the strip's creator. The strip literally takes place within the confines of inked panels on a piece of paper (and, later, on a computer screen). Cormier uses this premise to play with the conventions of comic strip writing and art, and particularly with the conventions of panel layout. His work from 2001 to late 2002 is an excellent example of the potential of the "infinite canvas." Unfortunately, the archives are currently in a state of disrepair, which makes it difficult to follow the storyline. Hopefully, Cormier will resolve this issue soon.

demian5. When I Am King. 2001. < http://www.demian5.com/king/wiak.htm>.

When I Am King is a "wordless sex comedy" set in a geometric desert kingdom filled with giant bees, fire-breathing dragons, and hallucinogenic cacti. In addition to the "infinite canvas" technique, demian5 makes use of frames, looped animations, and occasional changes in style to tell the story effectively.

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This pair of books from legendary comics creator Will Eisner (1917–2005) provides an exhaustive analysis of the techniques and idiosyncrasies of the comics medium. Using primarily his own work as a guide, Eisner explains the significance of framing an image in a panel, the pacing between panels, expressiveness in the face and body, and the balance of writing and art in a comic, among many other things. Eisner is often credited as the first person to recognize com-

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ics as a legitimate form of art and literature, and that attitude shows in these two books.

Goodbrey, Daniel Merlin. *E-merl.com: new experiments in fiction.* 1999–2005. http://www.e-merl.com>.

Daniel Merlin Goodbrey specializes in what he calls "hyperfiction"—non-linear, interactive pieces of digital concept art. He combines hyperfiction with infinite-canvas comic techniques to create "hypercomics" which use Flash and other web technologies to enhance the narrative (or lack thereof). On his website, you can read through these works and see the Tarquin Engine in action.

McCloud, Scott. *Understanding Comics*. New York: Kitchen Sink Press, 1993. ---. *Reinventing Comics*. New York: Paradox Press, 2000.

Scott McCloud's first book, *Understanding Comics*, attempts to define the traits which make comics unique as an artistic and literary medium. Its sequel, *Reinventing Comics*, discusses some of the challenges that comic book creators have faced (and continue to face) in publishing their work. These challenges include strict censorship, a lack of diversity in content, and a general public which does not consider comics to be "real" art or literature. In the second half of the book, McCloud examines the potential of computers and the Internet to help overcome those challenges and expand the medium of comics beyond the limitations of the printed page.

Scott McCloud is one of the most prolific writers on the subject of comics as a medium (second only to Will Eisner), and essentially the only published author who has addressed the issue of webcomics head-on. Thus, he has been a very influential voice in the world of comics in general, and webcomics in particular. Since *Reinventing Comics* was published in 2000, its information on computers and the Internet is slightly dated, but the basic ideas and principles that McCloud espouses are still valid and worthwhile.

---. I Can't Stop Thinking!. 2000–2001. http://www.scottmccloud.com/comics/icst/index.

I Can't Stop Thinking! is a webcomic series, originally published in the now-defunct Comic Reader, which serves as an addendum to Reinventing Comics. In a series of vignettes, McCloud elaborates on the idiosyncrasies involved in publishing comics online. McCloud's website also includes various experimental webcomics, and a substantial selection of links to other creators' websites.

Withrow, Steven. *Toon Art: the Graphic Art of Digital Cartooning*. New York: Watson-Guptill Publications, 2003.

This lavishly illustrated book bills itself as "the definitive guide to digital cartooning." It examines the technical and artistic aspects of digital art, in the form of both comics and animation. Withrow has compiled various articles, interviews and how-tos from the best artists working in webcomics and computer animation. (How he determines which artists are the "best in the business" isn't specified, but the technical quality of the artwork is consistently excellent.) The book is an excellent resource on the artistic aspects of digital comics, but falls short in discussing the practical aspects of publishing on the Web or elsewhere.

A massive list of innovative and/or entertaining webcomics may be found at my website, http://www.alyciashedd.com