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Distortions in Spacetime:

Emergent Narrative Practices in Comics' Transition from Print to Screen

Daniel Merlin Goodbrey

The medium of comics is undergoing a transition, as digital display becomes an increasingly popular mode of consumption. This is a transition that has been underway since before the general adoption of the World Wide Web and recent developments in portable display devices have advanced the pace of this change. Smart phones and pad computers now provide a single platform that supports a wide range of visual, narrative and interactive media. As comics gradually leave behind the trappings of print and embrace those of the screen, it becomes necessary to re-examine the fundamental storytelling practices of the medium in the context of these changes.

This chapter considers the relationship between space and time in comics and how this relationship has changed during the medium's transition from print to screen. It brings together and examines ideas from a range of comics theorists and practitioner-theorists to develop an analysis of the representation of diegetic time within the spatially-based medium of comics. In addition to comics theory, the chapter draws ideas from scholarship concerning digital media. It applies these theories to an examination of the changes in narrative practices within comics that have resulted from digital remediation. In this manner the chapter provides a critically grounded exploration and analysis of how the representation of time in comics has been changed by the range of new storytelling tropes emerging amongst digitally mediated comics.

The chapter also examines the degree to which not only technological possibilities within the digital age have shaped narrative techniques but also preconceptions within production culture regarding what constitutes the comics medium. It concludes by considering the limits of the digital comics form and the role of reader control as a key element within the medium. By examining the manner by which practitioners within the medium of comics have responded to the great technological shifts of recent decades, the chapter offers a perspective on the relationship between narratives and their changing contexts within the convergence era.

Comics, space and time

The word “comics” can itself be a confusing concept to discuss. As comics theorist Neil Cohn notes, wrapped up in the term are ideas about ‘the industry that produces comics, the community that embraces them, the content which they represent, and the avenues in which they appear’.¹ Comics is a form that has developed primarily within the bounds of the printed page, where it exists today in a variety of different formats ranging from serialised newspaper strips and comicbooks to longer form collected editions and graphic novels. Rather than one all encompassing comics industry, these formats are the product of an overlapping group of smaller industries, each with their own traditions, audiences and economics.

In this chapter, “comics” is used primarily to refer to the form or medium itself, separate from notions of format, content or industry. In considering the medium, the representation of diegetic time can be a useful lens with which to focus analysis. Comics theorist Thierry Groensteen outlines a basic difference between comics and other visual

media in this regard: ‘Every drawn image is incarnated and is displayed in space. The fixed image, contrary to the moving image of cinema, which... is at the same time a “movement-image” and “time-image”, only exists in a single dimension. Comics panels, situated relationally, are, necessarily, placed in relation to space and operate on a share of space.’²

The moving image of cinema, whether it be film or animation, is a time based medium. In contrast comics are spatially based, their component panels placed alongside other panels. The essence of the relationship between space and time in comics is summed up neatly by practitioner-theorist Scott McCloud, who asserts that ‘space does for comics what time does for film’.³ In expanding upon this line of thinking, McCloud notes that: ‘Comic panels fracture both time and space, offering a jagged, staccato rhythm of unconnected moments. But closure allows us to connect these moments and mentally construct a continuous, unified reality.’⁴

Time in comics is a fiction. It is a construction by the reader based on their interpretation of the artwork, panels, words and other symbols laid out by the comic’s creator. These two linked ideas of comics as a construction of the reader and comics as time told through space sit at the heart of McCloud’s thinking. Indeed, in his seminal *Understanding Comics*, McCloud states that ‘in a very real sense, comics is closure’.⁵ Closure in this sense is the act of seeing two images juxtaposed in space and mentally filling in the gap between them to create a fiction of time and movement. In his later book, *Reinventing Comics*, McCloud seeks to capture the very essence of comics and suggests we think of the form as ‘an artist’s map of time itself’.⁶

This idea of comics as a ‘temporal map’⁷ is key to McCloud’s early thinking on how the medium might adapt and mutate for the computer screen. Cohn provides a useful clarification of McCloud’s position as ‘not “physical space = fictive time” but rather “physical space = physical reading motion = fictive time”.’⁸ This clarification is helpful in addressing some key issues with the temporal map, such as the way word balloons and textual sound effects distort and shift the relationship between space and time. A panel does not necessarily represent a single moment in time but rather it is our progress through a sequence of panels or moments within a panel from which our sense of time in the comic is constructed. In terms of how this construction process takes place, Cohn observes that the role of panels is to ‘direct attention to depictions of “event states” from which a sense of “time” is derived’.⁹ Cohn elaborates on this concept further, stating, ‘Immediately juxtaposed panels do not always represent the progression of moments of time. In all cases, panels seem to functionally divide up a conceptual space – that is additively built throughout the sequence – into units of attention. Those windowed units could narratively be whole actions, individual event states, or aspects of a spatial environment.’¹⁰

The idea of connections between panels that exist beyond immediate juxtaposition is extended further by Groensteen, who argues that a comic ‘responds to a model of organisation that is not that of the strip, nor that of the chain, but that of the network’.¹¹ Groensteen goes on to state that this network ‘also exists in a dechronologized mode’¹² in which the reader can consider further relationships between panels outside of strict narrative sequence. This is significant because it helps to foreground the fact that space in comics serves as more than just the medium for the establishment of fictional time.

Arrangements in space can also be used in the establishing of symmetries, visual rhymes and other motifs that may impact on a narrative's meaning without directly impacting on the flow of time within the comic.

This chapter goes on to reveal how the unique affordances of digital screen-based platforms have permitted comics creators to develop new techniques in both their evocation of story time and their establishing of dechronologised connections between panels. First, however, so as to provide appropriate cultural and technological contexts to this discussion of digital comics creation, the chapter charts the emergence of this form from the 1990s onward and explores its relationship to print comics and their industries.

A change of space

Over the course of the last twenty years, the nature of the space that comics use to tell their stories has been undergoing a profound change. The beginnings of this change can be traced back to the early 1990s and the addition of image display to the World Wide Web. The Mosaic web browser's ability to display images contributed to a massive surge in popularity for the World Wide Web, with web use growing by a factor of 341,634 per cent over the course of 1993.¹³ It also leads to the emergence of the first webcomics – comics created specifically for digital display and distribution via the web.¹⁴

As the web grew in popularity through the 1990s, so the medium of webcomics expanded and matured, bolstered by a rapidly expanding community of new comic creators and readers. The web offered these creators an opportunity to reach a widening audience of readers without incurring the prohibitive costs of publication and distribution associated with print.¹⁵ By the early 2000s a dominant model for webcomics had begun

to emerge, similar in format (if not in content) to that of the daily newspaper comic strip. But even as this format began to take hold, so too did a new wave of webcomic creators emerge who were determined to push at the boundaries of the fledgling form and further explore the potential of the digital medium.¹⁶

Today, digital display is an increasingly popular mode of consumption for the comics medium. Portable touchscreen devices such as smart phones and tablet computers have provided a single platform of consumption on which comics, film, animation, games and other interactive visual media are equally at home. Traditional print comic publishers had been wary of making the leap to the web, where creator-owned webcomics had established a business model of offering free content and then making income via advertising and merchandising. But the prevalence of touchscreen devices and an increased acceptance of directly purchasing digital content has led to a significantly different publishing landscape. As a result, the larger comicbook publishers have finally moved to embrace digital formats, both as an avenue for additional income and as outreach towards new audiences. *Comixology* is a popular digital comics distributor used by several of the major US comics publishers. This service offers ‘a cloud-based digital comics platform... [for] discovering, buying, and reading comics’¹⁷ on tablets, smartphones and personal computers.

However, in terms of the representation of time, many digital comics do not operate significantly differently from their print forbearers.¹⁸ New media theorists Jay David Bolter and Richard Grusin propose the concept of remediation or ‘the representation of one medium in another’.¹⁹ In the case of webcomics that follow the form of the newspaper strip or the *Comixology* versions of monthly comicbooks, the

computer screen serves primarily as a new means of accessing a pre-existing format. As Bolter and Grusin say, it is as if ‘the content of the older media could simply be poured into the new one. Since the electronic version justifies itself by granting access to the other media, it wants to be transparent...so that the viewer stands in the same relationship to the content as she would if she were confronting the original medium.’²⁰ Accordingly, in most of today’s digital comics, the primacy of space as time is maintained. The layout common to newspaper comic strips has been adopted by webcomics without any real change to its spatial format. Similarly, the majority of repurposed print comics offered by *Comixology* or via the web are straightforward digital remediations of comics originally designed for the printed page.

A typical printed comic book can be displayed one page at a time on a computer screen, with a mouse click replacing the traditional page turn. In print comics that receive their initial distribution via the web, some creators willing to embrace the dimensions of the computer screen may opt to use landscape rather than portrait page dimensions. Although with tablet computers now offering an easily rotatable reading platform, this is becoming more of an aesthetic choice than an issue of readability. The touchscreen common to tablet computers is also significant for introducing the idea of swiping the screen in order to turn the page. This gesture, with a physical motion more akin to that of the traditional page turn, can be seen as an example of increased immediacy or ‘a style of visual representation whose goal is to make the viewer forget’²¹ the digital nature of the comic being consumed.

At present there are still relatively few digital comics that have been designed specifically for primary consumption via tablet computer or smartphone. There does

however exist a wealth of experimental work carried out by independent creators in the field of webcomics that points towards the potential offered by these new formats. In exploring this potential such works often tend towards a state of ‘hypermediacy’ in which the reader is increasingly reminded of the digital nature of the medium.²² Ultimately, it is only when creators start to question the tropes common to print and the medium pushes towards hypermediacy that we begin to see significant changes in the relationship between space and time. For the purposes of this chapter, these changes have been broken down across three broad categories:

- Page turns versus panel delivery
- Pages versus windows
- Space versus time

Page turns versus panel delivery

One approach to the flexibility of digital space is demonstrated in panel delivery based comics. Panel delivery retains the concept of the page as a grouping of panels and as such draws on the wealth of compositional tricks and tropes established by print. Importantly however, it does not treat the content of each page as being fixed. One of the original pioneers of panel delivery was webcomic creator John Barber, who here outlines his approach to laying out a sequence using the technique: ‘The screen will act as an unmoving stage onto which panels will appear. Initially, a single panel (or group of panels) is presented to the reader. The reader clicks on the stage and a new panel (or group of panels) appears.... These new panels join the previous ones, often replacing or obscuring some (or all) of them.’²³ The tension between page and screen inherent in this

approach was highlighted by Barber, who describes the result as being ‘a “malleable page”, using “page” somewhat ironically as this can only occur on-screen’.²⁴

Panel delivery can be seen at work in *Insufferable* (2012-present), an ongoing superhero webcomic written by Mark Waid and illustrated by Peter Krause. The webcomic follows the adventures of Nocturnus and Galahad, a dysfunctional father and son superhero team who are forced to reunite after years of separation. The online nature of the series was a departure for Waid, who had built his reputation over the previous two decades writing primarily for the two major US monthly comicbook publishers, Marvel and DC. Waid laid out his reasons for making the jump to a digital delivery and distribution platform, stating that he believed strongly that ‘comics can and will be a thriving mass medium in the digital age if–IF–they’re created for modern media devices and not exclusively for printed pamphlets that are overpriced, uninviting to new readers, and abominably distributed in only a relative handful of storefronts nationwide’.²⁵

Insufferable offers an example of remediation where the newer medium presents itself, to use Bolter and Grusin’s phrase, as a ‘refashioned and improved’²⁶ version of the original. In a traditional comic the pace of advancement through the story is fixed to the repetitive beat of the page turn. In contrast, advancement through a digital comic does not have to be tied to the same rhythm throughout the narrative. During the majority of *Insufferable* Issue 1²⁷ the reader clicks to advance through the story one page at a time, with each page consisting of fixed arrangements of separate panels. However, during a key sequence on one page towards the end of the narrative, there is a change in the pace of advancement. Nocturnus finds himself stuck in a pit beneath an old abandoned warehouse. As he struggles to rescue a kidnapped woman from the bottom of the pit, the

building starts to collapse above him. During the rescue each click reveals only a single panel of the page at a time, so as to more slowly reveal the events being depicted. This slows our experience of time within the narrative, increasing the tension for the reader before revealing a surprise rescue by Galahad in the very last panel.

Although originating on the web, panel delivery is also starting to appear among tablet-based digital comics. In an initiative led by Waid, US publisher *Marvel Comics* has begun to experiment with the process in their *Infinite Comics* imprint on *Comixology*. Unlike the majority of *Marvel* titles previously available via the service, digital comics like *Avengers vs. X-Men #1: Infinite*²⁸ and *Guardians of the Galaxy Infinite Comics #1*²⁹ have been designed specifically for consumption via the screen using panel delivery. To understand the significance of this, it is important to make a clear distinction between panel delivery and the ‘guided view’³⁰ that *Comixology* includes with the majority of the remediated print comics that it offers for download.

When following a guided view, the reader consumes each page of a comic from a zoomed viewpoint that shows one image at a time. A simple animated transition is then used to show how each image or panel relates to the next in sequence. It is a technique necessitated by the difficulty of adapting print comic pages to the smaller dimensions of smartphone screens (and similar issues between double-page spreads and tablet screens). It is unfortunately also a reductive experience, which severely limits the reader’s ability to appreciate the ‘dechronologized mode’³¹ of the original print comic’s spatial network. The guided view itself is created by the *Comixology* service without direct input from the creators of the original print comic. As such it offers none of the fine control over pacing,

panel positioning or page composition that is available to a creator making deliberate use of panel delivery in the creation of a digitally native comic.

The panel delivery approach taken in *Insufferable* and *Infinite Comics* has been heavily influenced by the work of cartoonist Yves Bigerel and his manifesto, *About Digital Comics*,³² which Waid cites as ‘the foundation... [for his] ...entire mindset and mission’.³³ The manifesto takes the form of a webcomic in which Bigerel demonstrates the new ‘story telling possibilities, [and] new ways to create time with space’³⁴ that panel delivery has to offer. He outlines the flexibility of panel delivery to shift page compositions to support new panel shapes or arrangements as needed, while still making use of traditional page composition techniques where appropriate. Bigerel suggests that by controlling how many panels are revealed each time the reader clicks to advance, the reader’s perception of time can be sped up or slowed down. Controlling when panels appear and the order in which they appear can also be used to create surprises for the reader or foreshadow dramatic events .

These processes can be seen at work in the previously discussed rescue sequence from *Insufferable*. As the reader clicks, the sequence of revealed panels builds towards a close up of Nocturnus, his eye opened wide in panic as he tries to think of a possible escape. Once the close up is revealed, further clicking causes the other panels to disappear, leaving this image as the sole visual element on the page and extending the protagonist's moment of panic. A further click then reveals a single word balloon with its tail leading off-page, foreshadowing the arrival of someone new to the scene. Only with a final click is the sequence completed, revealing the appearance of hand reaching in to offer rescue from above.

It is useful in considering the effects of panel delivery to return to Cohn's concept of time in comics. Cohn proposes that time is not necessarily created by the immediate juxtaposition of two panels, but rather by groupings of 'units of attention' (such as complete narrative actions, distinct states of action and aspects of narrative setting) that segment a 'conceptual space that is additively built throughout the sequence'.³⁵ Much of the impact achieved through panel delivery lies in allowing creators to play games with these units of attention. The delivery of a given sequence to the screen can be more finely controlled, while existing sequences can also be modified, broken down, reused or reconfigured in service of the narrative. In such instances the arrival of new panels on the screen can even be used to subvert usual compositional practice for deliberate effect.

In one sequence within *Guardians of the Galaxy Infinite Comics #1*, hostile aliens surround the story's protagonist, Drax the Destroyer. The sequence begins with a full-page establishing shot that shows Drax drinking at a bar while the first of the aliens talks to him from the right of the page. When the reader taps to advance, the following panel in the sequence then overlays the establishing shot on the left of the page, reversing the usual left-to-right reading order. Further taps bring up more panels overlaid against the original establishing shot, each depicting close ups of more of the hostile aliens. Drax is eventually left in the middle of the establishing shot, surrounded by panels on all sides just as in the story he now finds himself surrounded by enemies.

Barber notes that panel delivery 'defies the necessity of a left-to-right reading arrangement, as the movement of the new panel automatically draws the reader's attention, regardless of the placement'.³⁶ The overall effect of such techniques is to suggest a perception of time that is far less fixed and rigid than is easily achievable in

print. This plasticity of space and sequence becomes even more apparent once animation is incorporated into the panel delivery process. The nature of this incorporation will be explored later in the chapter, but first let us examine another alternate approach to digital display.

Pages versus windows

To return to the quote from Groensteen at the beginning of this article, it should be noted that ‘Comics panels, situated relationally, are, necessarily, placed in relation to space and operate on a share of space.’³⁷ Space in the world of print comics is a finite resource and every panel in a print comic has to be allotted its share of that resource. The space of the comic is broken down into fixed, homogenised groupings of panels we call pages and stories are often told across fixed, pre-determined page counts. For print comic creators, space is at a premium. They have been trained to get the most narrative impact possible out of every page and to make every panel count.

On the screen, the space a comic occupies is suddenly no longer finite, nor fixed. In *Reinventing Comics*, McCloud proposed the idea that ‘the monitor which so often acts as a page may also act as a window’³⁸ onto a much larger arrangement of panels. McCloud identified the page as simply an artefact of print rather than an intrinsic element of the comics form. He went on to offer the following prediction: ‘Once released from that box, some will take the shape of the box with them but gradually, comics creators will stretch their limbs and start to explore the design opportunities of an infinite canvas.’³⁹

Infinite canvas comics, as this subset have become known, have been taken up by many different webcomic creators since McCloud proposed the idea in 2000. With space no longer at a premium, the potential to experiment with the spatial relationship between panels becomes much more appealing to the creator. This brings to the foreground the concept of comics as a temporal map, where a change in the spatial relationship between panels can be used to influence the reader's interpretation of fictional time within the comic. In McCloud's own *Zot! Online: Hearts And Minds Part 3*,⁴⁰ the usual flow of panels in the webcomic is replaced with one long vertical panel lasting across six screens worth of scrolling. A mid-air explosion sees the story's protagonists falling through the sky with the vertical panel used to slow the experience of free fall, before the usual panel structure is abruptly resumed as the protagonists finally reach the ground.

In Drew Weing's *Pup Ponders the Heat Death Of The Universe*,⁴¹ the webcomic's protagonist sits pondering the entire future history of the Universe. As the reader scrolls through, the comic's panels become larger and then drop away altogether as the scale of both the events and time being pondered expands out beyond the edges of the screen. The sun expands to supernova, filling the screen and consuming the earth. The stars wink out and the reader is left scrolling through screen after screen of black as the protagonist tumbles through the void, lost in thought.

Conversely in Manien Bothma and Jason Turner's *True Loves 3: Business is Brisk*,⁴² we see the infinite canvas used to differentiate between small moments of everyday life. During the protagonist's wordless journey to work, individual moments from the journey are shown and plenty of white space is left between the panels to suggest they are part of a larger passage of time. Once the protagonist arrives at work and

enters into conversation with a colleague, the gaps between the panels shrink to suggest a more condensed experience of relative time.

Infinite canvas comics can also build on the concept of comics as a network. Groensteen notes of print comics that ‘every panel exists, potentially if not actually, in relation with each of the others’.⁴³ Once the reader is given the ability to easily zoom in and out on an infinite canvas comic, it becomes possible to see the spatial relationship between every panel in a narrative. This is comics not just as a temporal map but as a narrative map, giving a clear visualisation or shape to an entire story. McCloud notes how this can be used to ‘provide a unifying identity’⁴⁴ to a story, with the layout directly reflecting the events or tone of the narrative.

This narrative strategy is evident in my own *Never Shoot the Chronopath*,⁴⁵ within which the shape of the whole story is shown as three lines of panels that all cross through the same jumbled mass of panels positioned towards the right of the screen (see Figure 1). Zooming in to follow one of the lines reveals one of three parallel narratives that intersect during the jumble of panels (see Figure 2). Within the jumbled intersection of the storylines there is a breakdown in the usual flow of time which is mirrored in the confused order and spacing of the panels. As the reader zooms back out to follow a different a line through the story, the presence of the jumble in the overall shape of the comic remains a reminder of what’s to come, creating a sense of foreboding and inevitability within the narrative. The choice of pathways on offer in *Chronopath* also signifies a shift into the medium of the *hypercomic*.

A hypercomic can be defined ‘as a comic with a multicursal narrative structure’.⁴⁶ Cursality is the realisation on behalf of the reader that there are multiple paths through

the narrative in addition to the one they are currently following.⁴⁷ Different trails within an infinite canvas hypercomic can reveal divergent timelines, different sequences of events, points of view or narrative outcomes. This is an example of what Espen Aarseth refers to as an ‘ergodic’⁴⁸ narrative, meaning a reader’s experience of the work is often locally unique, based on the particular path they’ve taken through the story. To navigate the story requires non-trivial effort on behalf of the reader, with progression coming about as the consequence of a series of deliberate choices.

While the infinite canvas has remained a popular choice amongst webcomic creators, unlike panel delivery it has yet to see much adoption amongst digital comics created for smartphones and tablet computers. The hypermediacy of treating the screen as a window, with its more marked departure from notions of the traditional page does not fit well alongside the prevalent trend towards immediacy seen in the majority of comics delivered via touchscreen devices, whereby the page turns of print comics are emulated. However, as Bolter and Grusin note: ‘As each medium promises to reform its predecessor by offering a more immediate or authentic experience, the promise of reform inevitably leads us to become aware of the new medium as a medium. Thus, immediacy leads to hypermediacy.’⁴⁹

The more comfortable comic readers become with the concept of tablets and smartphones as media distinct from that of the printed page, the more accepting they will be of new, screen-based tropes. In recent years, my own work as a practitioner has been based around an exploration of this potential for innovation in digital comics. In my hypercomic smartphone app *A Duck Has an Adventure*,⁵⁰ the reader is given the opportunity to make key, life-changing decisions for the story’s protagonist. To do this

the comic makes use of a zooming infinite canvas approach. Each decision opens up a new pathway to follow, with a new trail of panels being created as the reader advances (see Figure 3). The more the reader explores the results of making different decisions for the protagonist, the more the story builds into a map of all the possible directions one person's life might take.

Before the infinite canvas, hypercomics had more often been modelled on the non-spatial relationship of linked 'lexia'⁵¹ (or pages) found in the World Wide Web. Infinite canvas hypercomics maintain the fixed spatial relationship between all elements of their narrative network. As such, divergent timelines and parallel threads of events can be given clear spatial relationships and resonances in a true 'artist's map'⁵² of time. In *A Duck Has An Adventure*, certain alternate timelines can be seen to mirror each other in their layout, leading to points of thematic and narrative crossover between the different trails (see Figure 4). Some endings to the story can only be reached once the reader has visited these crossovers via both of the mirrored pathways. The comic's temporal map thus becomes the site of puzzle-solving gameplay on behalf of the reader, as they attempt to find all the points of crossover in order to unlock further progress through the narrative.

Space versus time

The first section of this article established comics as a spatially based medium in contrast to time based media such as film or animation. However, another result of comics' move to the screen is that it has become possible for creators to easily include animated, time-based elements as part of comics' spatial network. In thinking about animation in digital

comics for the purposes of this chapter, it is useful to consider both animation of the content inside the panel and animation and movement of the panel itself.

Movement of the panel can essentially be considered as an extension of the ideas of panel delivery covered in the earlier part of the chapter. Animation in this case is used to provide a level of visual continuity to changes in the page layout. This plays into one of the characteristic pleasures Janet Murray identified as being inherent to digital environments, ‘the pleasure of transformation’.⁵³ Murray notes that: ‘Anything we see in digital format – words, numbers, images, moving pictures – becomes more plastic, more inviting of change.’⁵⁴

Animation of the panel provides a visualisation of this process of change. Rather than seeing simply a new spatial arrangement of panels as a result of a click, animation can be used to suggest the movement and rearrangement of the pre-existing panels as the direct result of reader interaction. The speed and style of panel movement can also be used to affect the meaning of the content within the panel or of the panel’s relationship to other panels in a sequence. Barber describes this process as ‘visual onomatopoeics’,⁵⁵ illustrating the phenomena with a simple example: ‘For instance, a panel of a character falling might drop down quickly or slowly depending on the speed at which the character falls.’⁵⁶

My own *The Mr. Nile Experiment 11: Burning Your Map*⁵⁷ is a webcomic that presents another approach to panel movement. The story is a metafictional narrative in which the protagonist has turned his comic into a conceptual time machine. Upon the reader’s activation of the time machine, a panel is animated to move back up the sequence of panels to the beginning of the comic, creating a divergent timeline that

changes the existing sequence of panels to show new events (see figure 5). In a later instalment of the series, *The Mr. Nile Experiment 15: We All Fall Together*,⁵⁸ constantly moving panels that cannot be controlled by the reader are used to suggest a breakdown of the usual flow of time within the narrative. Here, the loss of the reader's control over the animated element is used to mirror the protagonist's own loss of control over his metafictional reality.

Animation of content inside the panel is a technique common to many webcomics. Part of the reason for the popularity of its use can be seen as a result of the ubiquity of the GIF image format on the web, which provides a straightforward way to integrate animations into a comic. Short loops of animation can be used inside a panel without overly distorting the temporal map or challenging the primacy of space as time. They can be used to add atmosphere, for dramatic effect or to draw attention to specific qualities of the story world.

In one sequence from Demian 5's wordless webcomic *When I Am King*,⁵⁹ we see animation being used in three different ways. First it is used to establish the character of a store owner, whose pretensions to rock and roll stardom are embellished in a single animated loop of the owner dancing in his darkened store. Second it adds atmosphere to the scene, with the shop owner's boredom at his lack of customers highlighted by an animated panel of repeated foot tapping. Lastly it is used in place of the textual content in a word balloon, with an animated image of the store owner giving a vigorous hand shake being used to suggest the eager verbal greeting given to a customer entering the store.

One of the reasons animation can be made to work successfully within the digital comics form is that there is already a working precedent for its existence on the printed

page. Cohn draws attention to the phenomenon he defines as ‘polymorphic’⁶⁰ panels. These panels ‘show a single entity repeated in multiple positions of an action while remaining in a single encapsulated frame’.⁶¹ A simple example might be a dog chasing its own tail. The reader sees within a single panel the same dog in multiple positions as it rotates in place, trying to catch its tail. Cohn continues: ‘These panels seemingly represent the duration of time, rather than a single instance where the entity would seem to be in multiple positions at the same moment.’⁶²

In the panel itself there is no clear indicator where the motion starts or stops. As such, a polymorphic panel may appear to represent a continuous movement. But resolution of the action is provided by the rest of the sequence of panels of which the panel is a constituent; the dog cannot have chased its tail forever, as we see it walking along with its owner in the next panel. In the same manner, looped animation content within a digital panel has its resolution provided by the sequence of which the panel is part, therefore maintaining the primacy of space-as-time.

Digital display opens up many new possibilities for the inclusion of animation in the comics form. But ultimately it is a comic creator’s own notions regarding the nature of the form which shapes the extent to which they will explore these possibilities. Motion comics are a new digital format that many creators identify as having crossed the line between comics and animation. While often using existing print comics for their raw material, motion comics remediate this artwork into a form of cut-out animation which is then further augmented via the addition of time-based soundtracks and voiceovers. Waid makes his opinion of this format clear: ‘I kind of think of motion comics as the devil’s tool. ...They’re many things with voiceovers and music and so forth, but they’re not

comics.’⁶³ Such understandings regarding what features constitute the comics medium (and what features do not), ultimately establish limits on the ways in which many digital-comic creators incorporate animation within their work.

Waid identifies motion comics as a form of ‘cheap animation’,⁶⁴ lacking the fidelity of a traditionally animated cartoon while at the same time having lost their status as comics. But at what point does this transition from comic to animation occur? As indicated earlier, one element in making the determination between the two is to consider whether time-as-time or space-as-time has primacy in the user’s experience of the medium. Beyond this, there is another important determinant in separating the two media, the degree of the user’s control over their advancement through the narrative.

Film director and comic creator Guillermo del Toro, in a discussion about the differences between storytelling in different media, observed the following: ‘Who controls the pace in a comicbook page? ...Ultimately how fast a reader turns a page, how he goes back and forth between pieces in the layout is completely controlled by the reader. We can assume he goes left to right, we can assume he goes up to down but ultimately he’s in charge.’⁶⁵

The vital nature of the reader’s role is also highlighted by Bigerel, who stresses the importance of keeping control over time ‘in the reader’s hands’.⁶⁶ In his digital comics manifesto he cautions that the over-use of animated elements in the delivery of a comic can result in the reader being forced into becoming an observer of the animation rather than a reader of the comic. Bigerel suggests that the key to making a digital comic work as a comic to is to make sure that it is always the reader who ‘clicks to see what’s

next, with no fancy gimmicks coming from the temporal world to ruin the experience'⁶⁷ and to ensure that, above all, 'the reader is still in control'.⁶⁸

In print, as del Toro makes clear, the reader controls the pace of the story via their own pace of reading and the turn of the page. The importance of the reader and the act of reading is further emphasised by Barber, who asserts that: 'In reading, the reader controls the rate at which information is absorbed. This is inherent in comics; this is what separates comics from film.'⁶⁹ This is, as Waid observes, 'what makes comics, comics'.⁷⁰ Therefore, in digital comics, for a digital comic to still operate as a comic, the rate at which information is absorbed must still be set by the reader. Just as in a print comic, this is determined by reading pace and the digital equivalent of the page turn, whether that be a click, a scroll or a swipe. By keeping control of advancement through the temporal map, interpretation of the fictional time represented in the comic remains with the reader. In this manner comics' transition to the screen and adoption of screen-based tropes has foregrounded the importance of the reader's ultimate control over the temporal map.

Conclusion

This chapter has examined a variety of ways in which comic creators have explored the narrative potential of digital display. Comics have been established as a spatial network in which digetic time is interpreted by the reader through their reading of the panel sequences that constitute a comic's temporal map. An examination has then been made of how representations of time have been changed through the remediation of comics from print to digital formats and the ways in which comic creators have responded to these new tropes and opportunities. This has included panel delivery as a replacement for page

turns, which leads to a malleable page that offers greater fidelity over the pace of advancement. Increased fidelity has resulted in new techniques for influencing the passage of time, creating surprises and raising dramatic tension. These techniques, first seen on the web, are now being adopted by tablet-native digital comics, where they offer an alternative to repurposed print comics and the guided view.

The infinite canvas has also been examined as an alternative to page-based compositions. It is an approach that offers greater freedom to determine panel spacing and size, which can be used to influence the reader's interpretation of a comic's diegetic time. It also foregrounds the concepts of the temporal map and spatial network, which has in turn influenced the development of the hypercomic format. Lastly, there has been a consideration of the ways in which animation can be integrated into digital comics. This has included its use to animate the process of panel delivery and how this usage in turn influences narrative. It has also looked at the animation of the content inside comic panels and the pre-digital precedents for its inclusion. This examination has concluded by showing how the integration of screen-based tropes such as animation has highlighted the importance of reader control as a key characteristic of the medium of comics.

However, while the chapter has extensively detailed the unique storytelling possibilities that digital displays have afforded comics creators, it has furthermore shown that preconceptions concerning what defines comics as a form shape how creators capitalise on these affordances. The chapter thus emphasises that, while the process of digital convergence has the potential to erode distinctions between media, the particular cultural uses of digital technologies can nevertheless work to preserve the identities of media formed in a pre-digital age.

Notes

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- ³ Scott McCloud, *Understanding Comics* (New York: Harper Perennial, 1993), 7.
- ⁴ *Ibid.*, 67.
- ⁵ *Ibid.*
- ⁶ Scott McCloud, *Reinventing Comics* (New York: Paradox Press, 2000), 206.
- ⁷ *Ibid.*, 207.
- ⁸ Neil Cohn, 'The limits of time and transitions: Challenges to theories of sequential image comprehension', *Studies in Comics* 1, no. 1 (2010), 132.
- ⁹ *Ibid.*, 134.
- ¹⁰ *Ibid.*, 142.
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- ¹² *Ibid.*, 147.
- ¹³ T. Campbell, *A History Of Webcomics* (San Antonio: Antarctic Press, 2006), 15.
- ¹⁴ *Ibid.*, 17.
- ¹⁵ *Ibid.*
- ¹⁶ *Ibid.*, 33.
- ¹⁷ 'About Us – Comics by Comixology', <http://www.comixology.com/about>.
- ¹⁸ The business models of the larger US comics publishers are still built chiefly around selling printed products via speciality comic shops and book stores. As a result, the digital comics offered by these companies are mostly remediated versions of their existing print-based catalogue.
- ¹⁹ Jay Bolter and Richard Grusin, *Remediation: Understanding New Media*. (Massachusetts: MIT Press, 2000), 45.
- ²⁰ *Ibid.*
- ²¹ *Ibid.*, 272.
- ²² *Ibid.*
- ²³ John Barber, 'The phenomenon of multiple dialectics in comics layout' (MA diss., London College of Printing, 2002), 63.
- ²⁴ *Ibid.*
- ²⁵ Mark Waid, 'Welcome', 2012, <http://thrillbent.com/blog/welcome>.
- ²⁶ Bolter and Grusin, *Remediation*, 17.
- ²⁷ Peter Krause and Mark Waid, *Insufferable* Volume 1 Chapter 1, 2013, <http://thrillbent.com/comics/insufferable/insufferable-volume-1-chapter-1/#1>.
- ²⁸ Stuart Immonen and Mark Waid, 'Avengers vs. X-Men #1: Infinite', 2012, <http://www.comixology.com/Avengers-vs-X-Men-1-Infinite/digital-comic/23267>.
- ²⁹ Brian Bendis and Michael Oeming, 'Guardians of the Galaxy Infinite Comics #1', 2013, [://www.comixology.com/Guardians-of-the-Galaxy-Infinite-Comic-1/digital-comic/DIG003257](http://www.comixology.com/Guardians-of-the-Galaxy-Infinite-Comic-1/digital-comic/DIG003257).
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- ³³ Mark Waid, 'Off to C2E2', 2012, <http://markwaid.com/digital/off-to-c2e2>.
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- ³⁶ Barber, 'The phenomenon of multiple dialectics in comics layout', 65.
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- ⁴⁴ McCloud, *Reinventing Comics*, 227.
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- ⁵⁴ Ibid.
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⁶⁸ Ibid.

⁶⁹ Barber, 'The phenomenon of multiple dialectics in comics layout', 7.

⁷⁰ O'Reilly Media, 'TOC 2013: Mark Waid'.