

Image, Motion And Interactivity In Digital Comics

Imagen, movimiento e interactividad
en el cómic digital

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After introducing the different kinds of digital comic and their denomination, this article will focus on the combination of motion, animation and comic in the digital realm. First of all, it will explore the conflicts between both media and the first solutions developed by the creators of these hybrid forms. Then, with the inclusion of interactivity and touch screen reading devices, it will present some of the formal hybrid strategies with narrative function from case studies. It will conclude with an exploration of those works which emphasize the materiality of comics through the combination of traditional and digital mediums.

Tras presentar los diferentes tipos de cómic digital y sus denominaciones, este artículo tratará la combinación del movimiento y la animación con el cómic en el entorno digital. En primer lugar, se plantearán los conflictos entre ambos medios y las primeras soluciones desarrolladas por los creadores de estas formas híbridas. A continuación, con la inclusión de la interactividad y los dispositivos de lectura con pantalla táctil, se expondrán algunas estrategias formales híbridas con función narrativa a partir del análisis de ejemplos. Finalmente, se tratarán las obras que subrayan la materialidad del cómic a través de la combinación de un soporte tradicional y digital.

Key words

Digital comics, motion,
interactivity, narrativity,
reading experience

Palabras clave

Cómic digital, movimiento,
interactividad, narratividad,
experiencia de lectura

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When we talk about digital comics, even though it is a relatively young media, we are talking about a fertile, heterogenous field. Such denomination, digital comic, is used in a variety of ways by theoreticians, specialists and comic creators, so we will start by clarifying what type of work do we refer to in this article, when we talk about digital comics. Every comic created for digital media and digital distribution is considered a digital comic. However, we will exclude from the digital comic family the works created for print edition that afterwards has been digitalised, not adapted for its distribution online. These include both *scantrad*¹ as ePUB format publications, among others, of comics originally published in paper. We will refer to such works as digitalised comics. Finally, we will include those hybrid works that combine in digital media the characteristics of comic, alongside with those of other media, such as animation films or videogames. Many of these hybrids have become standardised, receiving specific denominations, with their format and distribution channels easily identifiable. Webcomics, webtoons, hypercomics, motion comics, motion books, turbomédia are some examples of it². These hybrid works are the centre of our interest.

According to Julien Baudry, we find hybrid works from the beginning of digital comics, in the 1990s, although original work that is truly multimedia were still rare³. In those years some work appeared, that was close to *point-and-click* videogames, distributed in CD-ROM format, such as *Opération Teddy Bear*⁴ by Edouard Lussan. Other comics were digitalised, and extra content added to them, like the augmented

version of *MAUS* in CD-Rom⁵. With regards to the combination of motion image and comic, *motion comics* became the main model, with the adaptation of *The Watchmen*⁶ to this format being the most representative work.

In the last decade, hybridation with videogames and the development of multi-linear narratives take a further step, given the influence of Scott McCloud and his “infinite canvas”⁷ theory. The works of Daniel Merlin Goodbrey, such as *A Duck Has An Adventure*⁸, and the digital version of *Meanwhile*⁹, by Jason Shiga. Works with motion image such as *motion comics* have been relegated by other formulae, such as *motion books*, which bet on using loop animation and movement synchronised with the reader’s navigation. The works *The Boat*¹⁰, an adaptation by Matt Huynh of the work by Nam Le, and *Notre Toyota était fantastique*¹¹, by Boulet, are two wonderful examples in which motion contributes great expressivity.

Animation and film effects on digital comic

At this point, we will focus exclusively on the use of movement in digital comics. As we mentioned earlier, among the first digital comics that include movement we find *motion comics*. Both cinematographic movement - camera movements, zooms, transition effects - and limited animation - loop animation or moving elements - were combined with sound and text bubbles. Cinematographic form and its temporality strongly determined these works: spatial temporality of comics, based upon the juxtaposition of panels in the space of the page was totally replaced by the juxtaposition of images and planes in time, that is characteristic of cinematographic image. This would place the reader in the role of a spectator, which was not well received at the time in the world

1. El *scantrad* es una práctica extendida entre los internautas fans de los cómics extranjeros, especialmente del manga. Consiste en el escaneo, traducción y distribución ilegal de cómics.

2. Los webcómic suelen presentar una maquetación próxima a la forma tradicional de la página y se publican periódicamente, ya constituyan o no una serie. Se distribuyen por internet en plataformas de publicación colectivas, en *comicblogs* o en redes sociales. El *webtoon* es un formato propio de Corea del Sur, donde tienen una gran popularidad. Se trata de historias cortas, seriales y de publicación periódica, pensadas para su lectura en dispositivos móviles. Se presentan en forma de banda a lectura vertical. Los hipercómics presentan historias no lineales al estilo de los libros “elige tu propia aventura”, con lo que el lector obtiene un cierto control sobre la narración. El formato *infinite canvas* formulado por McCloud (2000) es popular entre estas obras. Los *motion comics*, formato ya extinto, se acercaban a lo que en el mundo de la animación se conoce como una animática. Los *motion books* conservan un formato de página, maridado con la animación, el sonido y en algunos casos interactividad. Están destinados a la lectura en tableta. Los *turbomédia* adoptan el cuadro horizontal de la pantalla y buscan efectos narrativos utilizando la técnica denominada *panel delivery*, una técnica de narración secuencial temporal que permite la aparición, la desaparición y la sustitución de elementos dispuestos en superposición o yuxtaposición en la superficie de la pantalla.

3. BAUDRY, J.: “Généalogie de la bande dessinée numérique”. En ROBERT, PASCAL: *Bande dessinée et numérique*, París, CNRS Éditions, 2016, pp.36-37.

4. LUSSAN, EDOUARD: *Opération Teddy Bear*. Director artístico: SIMIAN, JACQUES, cómic educativo y programa ludo-educativo en CD-rom, Index Flammarion, 1996.

5. SPIEGELMAN, ART: *The Complete Maus CD-ROM - A Survivor's Tale*. Productor: SCARBOROUGH, ELISABETH, New York, Voyageur, 1994.

6. HUGHES, JAKE S., GORDON, LAURENCE, LEVIN, LLOYD: *Watchmen Motion Comics*. DVD de 12 capítulos, Warner Bros. Entertainment Inc., 2008.

7. McCLOUD, SCOTT: *Reinventing Comics*. New York, Paradox Press, 2000.

8. El “infinite canvas” propone sobrepasar los límites de la página para aprovechar el espacio digital infinito. Las viñetas pueden extenderse en cualquier dirección y la pantalla toma el rol de una ventana móvil de acceso a dichas viñetas. La navegación en cualquiera de las cuatro direcciones (arriba, abajo, izquierda y derecha) permite crear narraciones con bifurcaciones, donde la historia varía según la dirección tomada por el lector.

9. SHIGA, JASON: *Meanwhile*, 2011 <https://store.steampowered.com/app/714980/Meanwhile_An_Interactive_Comic_Book/>. [18 enero 2019].

10. HUYNH, MATT: *The Boat*, 2015 <<http://www.sbs.com.au/theboat/>>. [21 enero 2019].

11. BOULET: *Notre Toyota était fantastique*, 2013 <<http://www.bouletcorp.com/blog/2013/10/08/notre-toyota-etait-fantastique/>>. [21 enero 2019].

panels, it also lends life to the text, the panel frames themselves, the speech bubbles, and the margins. This kind of resource are called visual onomatopoeia¹⁴. In the comic we are dealing with, the slight vibration of the text is not casual; it transmits us the continuous vibration of the car engine. The onomatopoeias present specific motions: the indicator's "Tic! Tac!" imitates its flashing rhythm, the petrol pump's "Clac!" rotates like the wheels of its meter, and the "AMMMmmm..." of the gearbox pushes in with the same effort of the engine (fig.1). This last one makes one of the panels bounce in the gutter space, thus imitating the car skidding on gravel (fig. 2). These resources perfectly transmit the atmosphere of the story and the sensations perceived and lived by the character, which fosters the empathy and immersion of the reader in the story. Animation proves, therefore, its value as an enhancer of narrative in digital comics.

Limited animations and cinematographic effects also are integrated in digital comics without affecting the reading pace. In 2009, Balak (Yves Biguerel) exposes his theories on sequential art in digital media, with his work *About Digital Comics*¹⁵. With it, he would lay out the foundations of the format that would later be known as *turbomédia*. Such format manages to combine the spacetime system of traditional comic with the spacetime system of cinema, leaving the reading pace to the reader. This is achieved through a technique called *panel delivery*¹⁶, a time sequential narrative technique that allows elements to pop up, disappear and be replaced, be it a panel, a speech bubble or simply an image, overlaid or juxtaposed on the screen's surface. This happens every time that the reader uses the sideways navigation arrows that allow them to go forward or back while reading. This system allows authors to experiment with narrative both in time as in space, thus easily creating suspense or surprising effects. Evidently, loop animated images are not in conflict with this system, nor are short limited animation. Since our perception needs time to decode an image and react, even though this image contains no written text, the reader will always stay for some time on a new image, after using the navigation arrows. From his own experience creating *turbomédias*, Malec establishes a duration limit for an animation of around 30 frames¹⁷. A longer duration for an animation could be in conflict with the

reaction time of the reader, and therefore, with their natural, comfortable reading pace. Cinematographic effects such as zooms, camera movements and transitions are also used in this way to introduce new panels and bubbles or to change the framing of a certain panel.

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In the case of these animations and limited cinema effects exists thus a connection between the actions of the reader; it is their control on the navigation system what allows the narrative to progress. It could be argued that this fact does not differ greatly from the turning of a page as any traditional comic reader would turn. However, even in its more basic manifestation, Camelia Grădinaru argues that in digital texts, navigation functions must be considered as component of the text itself, not as external elements, since they make text a highly performative entity¹⁸. Accordingly, Anthony Rageul ventures the term *readactor*¹⁹ to refer to interactive digital comic readers. This becomes more obvious in works with a higher degree of interactivity or with non-linear narratives.

This relation between navigation tools and narrative development has been exploited in digital comics, generating a pairing between the action of the readactor and the response of the text, which manifests a movement or an animation. In the hypercomic *Icarus Needs*²⁰ panels are placed in space beforehand, however the reader can only watch a few of them at a time, in the manner of an *infinite canvas*²¹. The navigation system, the four arrows of the keyboard, allow to move the visualisation window of the panels in the chosen direction, as well as to move the character representing the readactor between panels, as though it were a videogame. Therefore, suspending the spatial representation of time that is typical of comics (in which all the visible panels represent the present time).

In the case of digital comics for touch screen devices, the different gestures of the readactor are associated to specific functions and they produce different narrative meanings. In *Touch Sensitive* by

14. BARBER, J.: *The phenomenon of multiple dialectics in comics layout*, tesis de Máster, London College of Printing, Londres, 2002, p. 66.

15. BALAK: *About digital comics*, 2009 <<https://turbointeractive.fr/about-digital-comics/?series=about-digital-comics>>. [22 enero 2019].

16. BARBER, J.: *The phenomenon of multiple dialectics in comics layout*. *Opus cit.*

17. Declaración del autor durante la jornada de estudio *(Im)materialité de la Bande dessinée*, organizada por los estudiantes del máster de comic del EESI

de Angoulême, Auditorio del Museo del Cómic de Angoulême, Francia, 31 de mayo de 2013.

18. GRADINARU, C.: "The Text and Its Space(s) : Textual Practices in Digital Culture". En COLLÉ-BAK, NATHALIE, LATHAM, MONICA y EYCK, DAVID T.: *Book Practices et Textual Itineraries, Textual Practices in the Digital Age*, vol. 2. col. Regards Croisés sur le monde anglophone, Nancy, PUN Éditions Universitaires de Lorraine, 2012, p. 58.

19. RAGEUL, ANTHONY : *Bande dessinée interactive : comment raconter une histoire*, tesis de máster, Master Arts et Technologies Numériques, Université Rennes 2 Haute-Bretagne, 2008-2009, p. 68.

20. GOODBREY, DANIEL, MERLIN: *Icarus Needs*, 2013 <<https://www.kongregate.com/games/Stillmerlin/icarus-needs>>. [18 enero 2019].

21. Ver *infra*, nota XI.

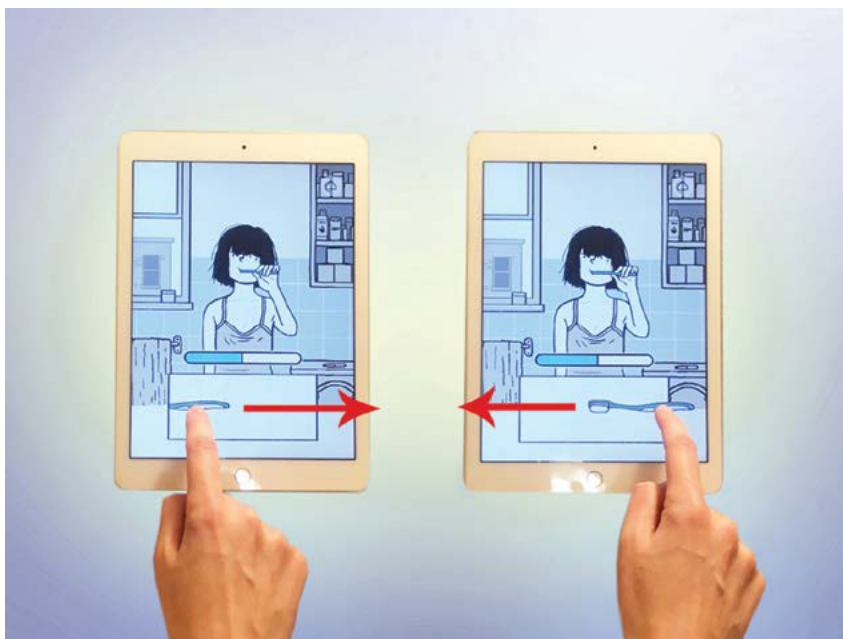


Fig. 3. Gamecomic Florence.

Chris Ware, touching the screen, equivalent to clicking or typing, to move forward or backward in reading has been replaced by a horizontal finger swipe. On the one hand, such gesture retains a similarity with turning a page. On the other hand, the gesture has a narrative meaning, since this work explores the crumbling of a relationship through the physical contact of a couple. The only moment that we must use a gesture that is more brusque than sliding is punctuated by an animation with a clear *affordance*²²: one of the frames displays an animated loading circle that becomes a play button. This way, the reader understands that they must touch/press the image, which produces a triple *mise en abyme*. The reader's gesture starts off an animation in which it is the student who performs the same gesture on her own device, thus bringing us to the end of the story, in which we learn that the main character has not performed that gesture to answer her husband's phonecall.

On its part, the electricomic *Sway*²³ uses a number of navigation gestures with a different objective: exploring the narrative. Sliding a finger horizontally allows the reader to pass the pages and to read a linear

story, however, tilting the device in certain passages causes the main character to leap from diegetic spacetime, revealing additional sequences. Taking this beyond the narrative realm, but also the most playful one, the gesture of the reader on the touch screen is the main vehicle for empathy and immersion in the *gamecomic Florence*²⁴. The narration develops well through comic strips, either as interactive sequences in which the reader must perform different actions to construct the narration (fig. 3 and fig. 4): from turning the alarm clock off with a single touch, to brushing their teeth with appropriate movements, to assembling a conversation by putting together the pieces of a puzzle and organising the contents of a house after moving home, by flinging objects into a box. Also, the consequences of some of the reader's interactions come up again in different moments of the story. For instance, a drawing that was made at the beginning of the story is found later. This fact makes the reader's contribution to the narrative explicit, and is evidence of the way this work is personalised, unique with each reading experience.

With regards to comic strips, vertical or horizontal, navigation is based upon sliding or scrolling, coherently with the format. Even then,

22. Utilizamos término *affordance*, según la definición de Donald Norman (*The Psychology of Everyday Things*, 1988). El término hace referencia a las propiedades reales y percibidas de un objeto, fundamentalmente aquellas propiedades que apuntan a la posible utilización del objeto.

23. MOORE, LEAH, REPPION, JOHN: *Sway*. Editado por Electricomics, 2015.

24. *Florence*, aplicación para dispositivos móviles. Desarrollador: Mountains. Productora: Anapurna pictures. Melbourne, 2018.

some works have gone beyond in exploiting the resources of this system. In the works *Phallaina*²⁵ and *The Ocean is Broken*²⁶ graphic and narrative elements appearing and disappearing takes place through a parallax effect²⁷, that has been synchronised with the sliding gesture by the reader. On the one hand, *The Ocean is Broken* uses this synchronised movement to build and build again the narrative, through the coming and going of the panels, the bubbles, the characters themselves and other elements. On the other hand, *Phallaina* uses this resource expressively to transmit the anguish and oppression of the main character during her epileptic crises, in which visions of marine and mythological beings invade the space around her.

Materiality of comics has augmented

As we have observed, traditional reading and interactive reading experiences are not completely opposed. In the examples given, digital comics have managed to combine them and update them. There are also works that manage to create a bridge between different experiences but also between media. This is augmented comic. Such works present themselves as classic comic albums, while they also are apps for mobile devices. The album's narrative has complete meaning, so synchronised reading with a digital device is not necessary. However, the digital version adds an extra layer of depth to the narration, as in *Modern Polaxis*²⁸. Polaxis is a time traveller who believes that our reality is a projections generated from another plane of the universe. The album is their diary, in which daily notes are logged in, of their advances in the search of the agent of such projection. Their secret information and conspiracy theories are accessible only through the app. The illustrations of the pages scanned by the camera of the device come alive through colourful animations, complete with music and the secrets of the main

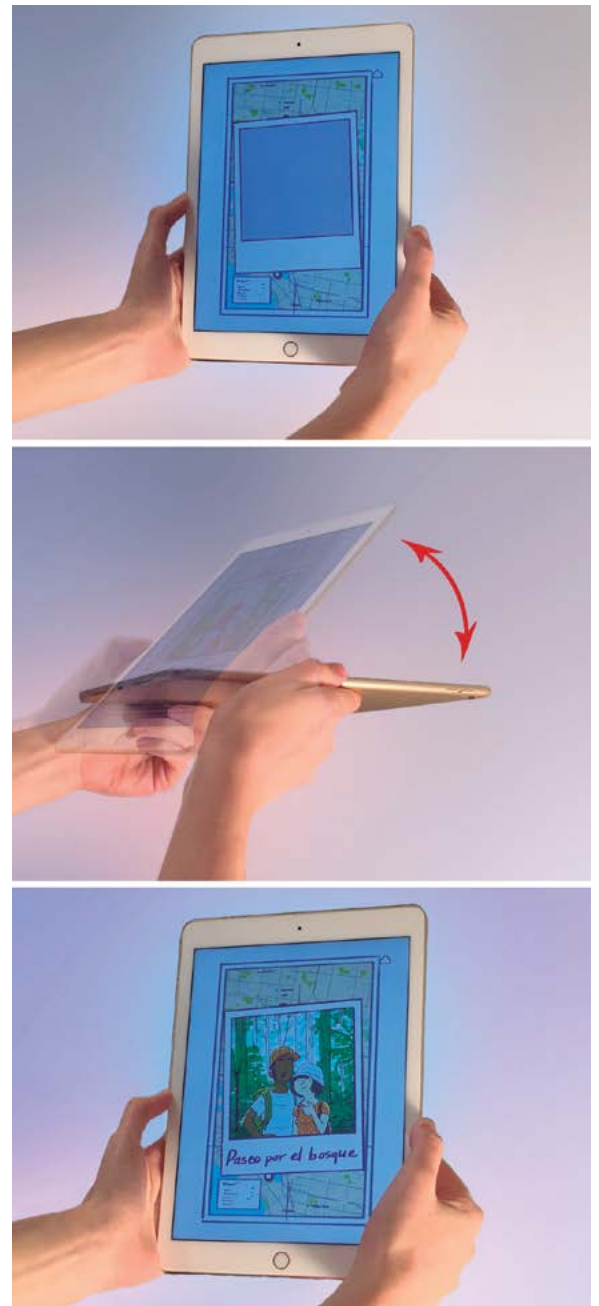
25. REN, MARIETTA: *Phallaina*, aplicación para dispositivos móviles. Coeditado por France Télévisions y Small Bang. 2016.

26. SUTU: *The Ocean is Broken*, 2015 < <http://ocean.sutueatsflies.com>>. [24 enero 2019].

27. El efecto de paralaje en animación pretende sugerir un desplazamiento de punto de vista y una profundidad de campo. Este se consigue mediante la superposición de imágenes en capas que se desplazan a velocidades diferentes.

28. SUTU: *Modern Polaxis*, 2015 < <http://modernpolaxis.com>>. [24 enero 2019].

Fig. 4. Gamecomic Florence.



character (fig. 5). On its part, the digital dimension of *Binary Land "Hello World!!!"*²⁹ chooses to play with time expansion of some of their panels. As we explained earlier, each panel is a sort of capture of an action that belongs to a sequence. When we place our device on one of the panels marked in the album, these reveal themselves as complete sequences of fixed images, or sequences of animated, interactive images that had been synthesised in one single image. Through their device, the reader can explore the sequence and playfully participate in completing it.

Conclusions

Movement and animation have been exploited by digital comic creators since the origins of the media. Given its expressive, multi-functional character, these may be used to arrange the narrative sequence or just as a purely narrative, poetic resource. Obviously, the way it may be used depends on the author's intention, and they may not be used, in the same way colour may not be used. Without a doubt, they are one of the main focus of interest for experimentation and media hybridation for digital comics. We can even observe a process of refining the use of movement and animation, that responds to an appreciation of the reading experience and an interest to preserve the reading pace at the hands of the reader. I do share these ideas, however I firmly believe that the digital literacy of new generations, more used to transmedia discourse, to consuming multi-platform contents, and to interaction with such contents, will cause a change in the way these works are received. Considering them as a collage of formats, with distinguishable experiences will be less of a trend, and

more and more they will tend to be understood as formally heterogeneous, yet at an experience level, an inseparable unity. Augmented comics clearly go in this direction, associating a physical format, not only the media format, to the different dimensions of the work, which would be not be complete in absence of any of these dimensions.

On the other hand, the performative character of digital comics is a fundamental element that should not be understated. This performativity gives the reader, in a sense, the status of co-creator of the narrative, even in the cases in which this is reduced to navigating the content. However, the reader's actions cause an answer in the behaviour of characters, in the shape of animation and movement in other, or even condition such answers. This fosters empathy and strengthens immersive readings and agency³⁰. In consequence, the works that dedicate more effort to designing an interface and reading and interaction mechanics that are singular and coherent with the narrative, benefit from a deeper implication of the reader with the story and the fictional world. Also, those works that make the most of the haptic qualities³¹ of mobile devices with this end, manage to finetune the physical threshold that separates the reader from the fictional universe.

Combining not only formal characteristics and the language of traditional comic with those of other media, even combining materiality of different narrative devices, digital comics prove to be a flexible media, open to a continuous transformation, while not renouncing their origin.

29. MURRAY, J. H. (1998): *Hamlet on the holodeck: the future of narrative in cyberspace*. Cambridge, Mass., MIT Press, 1998, p.126-153.

31. La percepción háptica o tacto activo hace referencia al conjunto de la percepción táctil estática y cinética, es decir, a la información proporcionada simultáneamente por los receptores cutáneos y por el movimiento voluntario de las manos.

29. MILÉSI, B., MILÉSI, J., MUNOZ, R.: *Binary Land "Hello World"*. Desarrollador: Transmii Studio, 2012 <<http://www.transmii.com/project/monde-binaire/>>. [24 enero 2019].

Fig 5. Modern Polaxis



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