

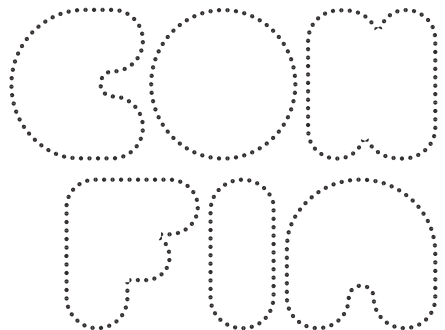
CONFERÊNCIA INTERNACIONAL  
EM ILUSTRAÇÃO E ANIMAÇÃO  
INTERNATIONAL CONFERENCE  
IN ILLUSTRATION & ANIMATION

30.11-01.12 | OFIR-PORTUGAL



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1st International Conference on Illustration and Animation  
CONFIA • IPCA

CONFIA is the first International Conference on Illustration and Animation at the Polytechnic Institute of Cavado and Ave, organized by the Department of Design in the School of Technology under the auspices of the Masters in Illustration and Animation. It is intended to be a pivotal moment in the contemporary discussion of these areas, which have a long tradition and, at the same time, are pioneers in technological innovation. In this conference and publication we intend to broadly explore the multidisciplinary space that includes illustration and the animated image, from the construction of the narrative to character development, from art theory to critical reflection on the objects that populate the market and the industry.

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## PREFACE

### Illustration and Animation

Before beginning I should refer how honoured I am to write these words that introduce the first edition of CONFIA, international illustration and animation conference.

In Portugal, until very recently, illustration and animation based higher education courses, were very scarce and only provided by a few private universities, which offered separated programs - either illustration or animation. The MA in Illustration and Animation (MIA) based in the Instituto Politécnico do Cávado e Ave in Portugal, dared to join these two creative areas in a common learning model and is already starting its third edition with encouraging results. This masters program integrates several approaches and techniques (in illustration and animation) and integrates and encourages creative writing and critique writing. In parallel and to support the knowledge produced in MIA's context, we decided to create an international conference on illustration and animation.

As MIA (MA in Illustration and Animation), CONFIA aims to be a national and international reference in research specifically in Illustration and Animation, Drawing and Audio-visuals in general. This conference was planned to be a meeting point for specialists, artists and scholars at a global level, supported by our Scientific Committee and its recognized merits concerning artistic, academic and commercial levels in projects for animation production companies or publishing illustration for children.

The response to our call for papers was motivating, with a number of 45 selected and reviewed papers included in this publication in Drawing/Illustration, Animation and Art theory and specific sub-areas of knowledge: traditional drawing; contemporary drawing, graphic illustration; information graphics; editorial illustration, illustration for children; character design, comics & graphic novels; scientific Illustration; 2D animation; 3D animation; animation for video games; character animation; animation for virtual or augmented reality; animation in interactive media; motion graphics; sound and animation; linear storytelling; creative writing; visual culture; interactive storytelling; narrative and non-narrative animation illustration and animation pedagogy and

authorship in animation or illustration.

I would like to thank the invaluable work of the Scientific Committee that supported this project since the first moment. For Instituto Politécnico do Cávado e do Ave it's an honour to organize this first conference in these emerging areas, and cultural industries, that by definition through talent and creativity, are the engine of job creation and cultural and economic wealth.

We hope that research and CONFIA contributes to find new routes for knowledge.

**Paula Tavares**

Polytechnic Institute of Cávado and Ave, Portugal

## **ILLUSTRATION, AUTHORSHIP AND THE POLYMATH PRINCIPLE**

This lecture is based on aspects contained in two books that I have written about illustration. It concerns research, multi-tasking and authorship with a particular emphasis on the intellectual process for solving problems of visual communication.

It is a provocative thesis that celebrates the notion that an illustrator can be a polymath: a convenor of original knowledge, an authority regarding subject matter, a designer and concept originator and have a complete, esteem driven ownership for their creative practice.

**Alan Male keynote**

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# THE MYSTERIOUS ANIMATED INVENTIONS BY ANTHONY LUCAS, OR THE EPIC OF JASPER MORELLO



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## Abstract

This essay analyzes Anthony Lucas' short film *The Mysterious Geographic Explorations of Jasper Morello* (2005), an adventure film set at a Steampunk universe, which proposes a revision of literary classics of science fiction as H.G. Wells and Jules Verne. The paper will stress the idea of animation as a means to revisit subsequent texts, establishing re-animating relations between them. Also, the article will highlight the idea of the animator as inventor, describing the procedures that have led Anthony Lucas to a bold combination to join the 'retro' with modernity.

## Keywords

Animation, Anthony Lucas, Morello, Steampunk, design, Victorian, Science-fiction, literature, digital composition, stop-motion.

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## 1 · Introduction

With its long title, Anthony Lucas' *The Mysterious Geographic Explorations of Jasper Morello: Jasper Morello and the Lost Airship* (2005) is an animated short film, which was intended to lead a fascinating series of adventures set at a Steampunk universe. Eventually the only one produced, this pilot episode succeeded thanks to its unique aesthetic and narrative, earning an Oscar® nomination for best animated short in 2005.

Its director, Australian filmmaker Anthony Lucas, forged an extraordinary Gothic atmosphere here — already announced at his earlier career, as his short film *Holding Your Breath* (2002), with which he had already begun to shape his personal imaginary that he denominates 'The Shadowlands' [1]. Through a technique as delicate as silhouette animation under camera, and incorporating new technologies such as digital composition and 3D computer animation, Anthony Lucas created a visual language suitable to express the mythical and legendary from his imagination (Fig. 1).

Moreover, *The Mysterious Geographic Explorations of Jasper Morello* revisits several classic novels from Nineteenth century literature, especially H.G. Wells' *The Island of Doctor Moreau* (1896) [2] and Jules Verne's *Twenty Thousand Leagues Under the Sea* (*Vingt mille lieues sous les mers*, 1869) [3], suggesting that animation establishes re-animating relations between these texts. Firstly, the paper will present an analysis of the alternative universe where the adventures of Jasper Morello take place, highlighting the Steampunk countercultural philosophy that lies beneath its iconography. Secondly, the essay will identify the components of the literary amalgamation that has resulted in the film narrative. Finally, the article will stress the idea of the animator as inventor, describing the procedures that have led to a bold technique combination to achieve the 'retro-futuristic'.

F. 1, 2. On the right, Anthony Lucas and his protagonist. On the left, a Steampunk airship from Gothia.



## 2 · The World of Jasper Morello, a Steampunk Fantasy

Steampunk — from 'steam' and 'punk', a critic to current society — was in its origins a literary subgenre born in the realm of speculative Science-fiction in 1980, though nowadays it has grown up to become a whole artistic and social movement. Steampunk unfolds in a setting where steam power is still the predominant, with a nod to Victorian England (Fig. 2). Anachronism, escapism, obsolescence — with its obsession with exposing the machinery, nuts and wheels of each mechanism —, even fetishism, are its most common style brands.

For Scott Westerfeld, a Steampunk novels writer, the phenomenon is 'partly a set of nostalgias — for handmade and human-scale technologies, baroque design, and elegant dress and manners' [4]. Cinema and television have brought — when not preceded — this philosophy to the screen, giving place to graphic novels, series and films such as Stephen Norrington's adaptation of Alan Moore's comic book *The League of Extraordinary Gentlemen* (2003), Guillermo del Toro's interpretation of Mike Mignola's *Hellboy* (2004), Barry Sonnenfeld's re-actualization of the classical TV series *Wild Wild West* (1999), or Katsuhiro Otomo's animated film *Steamboy* (2004). However, the early silent film by Georges Méliès' *A Trip to the Moon* (*Le voyage dans la lune*, 1902) properly announced the most important features of this subgenre.

However, *The Steampunk Bible* makes an all significant statement concerning Anthony Lucas' film: 'In twenty-six minutes, *Jasper Morello and the Lost Airship* manages to achieve a more concentrated Steampunk effect than any full-length film of the last hundred years, and does so with flair and grace' [5]. The film tells the story of an unfortunate navigator, Jasper Morello, enlisted in an expedition in search of a cure for the disease that ravages his city, Gothia. In the course of this odyssey, Jasper meets Dr. Claude Belgon, who commands the experiments on board; he will be his friend at first, but later the doctor becomes his enemy. At the outcome of the film, Jasper Morello will have to decide between his own surveillance and self-sacrifice to bring the cure they have found to civilization.

Through a refined language of lights and shadows, where silhouettes are intended to express the most essential things, Gothia

appears as a sophisticated industrial metropolis that, like Gothic architecture, seems to seek verticality at all costs: the construction cranes, the rails connectors, dominate stylistically this city, reducing it to its most functional components. Transport means and vehicles show their inner mechanics, because Steampunk is more fascinated by the arts and crafts of prototyping than to mass production — which hides its gears and devices.



**F. 3, 4.** On the right, chasing scene from the film. On the left, Victorian PC, modifications by Jake von Slatt.

At Jasper Morello's universe, the space is crossed by aerial ships moved by steam-power, and continents are floating islands. As well, communications imply the use video-phones, and the Morello's 'compass' combines the old sextant and the newest GPS. The crew also plays original music instruments, and they shot blunderbusses-like weapons activated by batteries (Fig. 3). The inventions at Anthony Lucas' film recall numerous designs by Jake von Slatt, by Datamancer, or even by the San Francisco collective Kinetic Steam Works, all them dedicated to creatively reimagine every kind of steam-propelled — or not — gadgets: laptops that are activated by winding mechanism, Victorian All-In-One PC's with keyboards as typewriter's, original electric guitars, etc., can be found at these extraordinary cabinets of curiosities (Fig. 4).

Notably, the presence of technology in the film is aimed to re-think the familiar: for instance, how our civilization would look like if the predominant electric system had been Nikola Teslas' — and not Thomas Alba Edison's? This is one of the paths towards 'Uchrony': the shaping of an alternate universe from a divergence in a major historical event, for example the resolution of a war, or if a particular historical person never existed, as a scientist or ... Christ. Precisely, one of Gothia's most astonishing properties is their ignorance of Christianity, determining different laws and values : at the repeated litany from mass burials we listen,

'Through the Horizontal and the Vertical we draw Faith', as a glorification to science and progress that could only be conceived at an agnostic society; however, the symbol evoked bring to mind the cross of Calvary.

Furthermore, not only society and technology is re-formulated by Steampunk, but nature itself: at the film we see flying pig-fishes and giant carnivorous insects, among other phenomena. The monstrous giant insects found by Morello at a lost island presents unique properties, as its chasing mechanism: a decoy imitating a bird that sings marvelously; when the victim is attracted, the monster throws against it his arms long as lianas (Fig. 5). In this evolution of species, where mutation and transformation predominates, nature resembles a bestiary of living machines — endowed with more automatic reactions than really instinctive: this way, the reinvention of the natural world evokes other Steampunk inventions, as the Insect Lab by Mike Lobby (Fig. 6)— a showcase of mechanical animals whose design obeys more to the potential than to the merely functional: for the Steampunk designer, as for Anthony Lucas, the most naive and outdated forms of manufacturing define the attributes of their universe.



**F. 5, 6.** On the right, long shoot of the insect-monster. On the left, Mike Lobby, 2009, Dynastidae: Eupatorus Cracilicornis, rhino-beetle with metal gears.

### 3 · 'Every man has his purpose': Mas Scientists and Literary Alchemy

This section will refer to the literary mix that underlies the film, widely shared with the Steampunk as alternative Sci-fi, fascinated by lost continents, travel, robots, laboratories and enlightened scientific from Victorian literature. The film takes from on H.G. Wells and Jules Verne, the first characterized by elliptical description and fantastic subjects, and the second captivated by the detail of scientific reports and inspiring much of his writings on exist-

ing technology. However, at specific scenes from the film, it also draws from Poe, Conan Doyle, Daniel Defoe and even from Bram Stoker's vampire stories.

The film maintains unquestionable structural coincidences with *The Island of Doctor Moreau*, although it may also call to mind *Twenty Thousand Leagues Under the Sea*, repeating some characters' typologies: the castaway who tells his story, a normal man forced to live with an undesired host; and his alter ego, a talented adversary able to commit the worst aberrations to follow a messianic goal, though his performance eventually turns against him. The mad scientist serves as a hinge between the unlikely and the functional, between speculation and science, because his eccentric mind melts the most utilitarian mechanics with dark alchemy, as suggested by the remanufacturing of the human in Mary Shelley's *Frankenstein* (1823) and *The Island of Doctor Moreau*, whose scientists precede biologist Claude Belgon from Anthony Lucas' film (Fig. 7).



**F. 7, 8.** On the left, doctor Claude Belgon feeding with his blood the beast. On the right, Jasper Morello video-talks with his wife Amelia.

At the beginning of the trip, Jasper Morello and Dr. Belgon befriend each other and share confidences. To console the afflicted navigator, the doctor says to him: 'Like the ant, every man has a purpose'. But the real purposes of the scientist do not emerge until their ship collides with an abandoned fishing aircraft: since then, he will be obsessed with the idea of bringing to the Academia an unknown — but hostile — species, whose rests appear in the ghost ship. So he convinces the captain to head towards the quadrant where the ship had been before. In this unexplored area Belgon find his Golden Fleece, but also the cure that Humankind needs, because the insect-monsters, ferocious and uncontrollable, turn out to be the basis of the medicine. The scientist, excited by the double discovery, does not hesitate to take the chrysalis of one of these beasts, yet unborn and defenseless. But once it hatches, the

scientist will sacrifice the entire crew to keep the creature alive, in a way that recalls the slow bleeding of sailors aboard the ghostly clipper 'Demeter' in Bram Stoker's *Dracula* (1897).

Inversely, Jasper Morello's only motivation is to return home with his wife, Amelia (Fig. 8). Though absent, the woman works as a catalyst of storytelling, but she also endows it with a significant subtext: women have the natural gift of producing life, a power that unmarried scientists secretly want to imitate. In Anthony Lucas's film, Dr Claude Belgon expresses its rejection of women as an obstacle for men to reach their scientific destination: 'Women! They can carry themselves into the future through their ability to procreate, but a man can only do so through his work! We, men of science, should stick together', he says, tightening his intellectual, almost homoerotic bond with the navigator.

At the outcome, while Claude Belgon dies while Claude Belgon victim dies of the events he has caused, Jasper Morello gives their blood, drop by drop, to keep alive the creature that will bring the cure to Gothia: the doctor has forced him to do so, because Jasper is afraid that Amelia, his wife, suffers from the dreadful infection. With its open end, the selfless sacrifice of Morello recalls the death of Captain Nemo at Jules Verne's *The Mysterious Island* (*L'Île mystérieuse*, 1874), finding redemption for his past mistakes.

The Mysterious Geographic Explorations of Jasper Morello shows animation as a potential re-animating machine for past literature, composing them in a new, dynamic body. This extraordinary story takes from numerous remarkable precedents, like the macabre in Edgar Allan Poe's *The Narrative of Arthur Gordon Pym of Nantucket* (1838) and Joseph Conrad's *Heart of Darkness* (1899), with the main character discovering the dual nature of the human through a horrifying experience. Likewise, the depiction of the epidemic seems like Daniel Defoe's *A Journal of the Plague Year* (1722). Moreover, the tenebrous aesthetic, the angulous design and, above all, the disturbing presence of the doctor recall Count Orlok in F.W. Murnau's *Nosferatu, eine Symphonie des Grauens* (*Nosferatu*, 1922) and silent horror film in general. As Roland Barthes observed [6], authorship is disintegrated during the creative process, which necessarily owes to a tradition and a previous knowledge. Quotation is the most tangible evidence

of this process: Anthony Lucas collects in the body of his film the spectral presence of many other writings, where he recognizes the Lucasian; if animation is a form of writing, it may also be (evil) re-animation of former texts.

#### 4 · Branches, Gears and Digital Composition: the Animator as Inventor

Jake von Slatt, in his 'A Steampunk Manifesto', wrote: 'The nineteenth century holds important lessons for us dealing with disruptive technologies, as well as giving us readymade technical solutions that were once discarded as inefficient' [7]. Steampunk provides the arts and crafts with a renovated value, far beyond those from mass production: the use of found objects, the recycling of residual matters, and the recovery of old-fashioned processes, are the main commitments of this manifesto, interiorized by Anthony Lucas as a behavior. As a matter of fact, the most remarkable aspect from Anthony Lucas' film is no other than the astounding technical mix between the old and the modern: in *The Mysterious Geographic Explorations of Jasper Morello* work together the properties of stop-motion animation and the newest capabilities of digital composition, opening an extraordinary field for silhouette animation under the camera, an artistic animation process — which was in clear decay.

However, the idea of the film animated using traditional techniques is illusory, since the characters were animated using Flash, though keeping the aesthetic identity of silhouette animation — as practiced by Lotte Reiniger and later by Michel Ocelot. Nevertheless, this had not been possible without the previous experience of Anthony Lucas as stop-motion animator, displayed in films such as *The Shadowland* (1988), where he shapes for the first time his sinister imaginary of stylized humans and voracious giant insects. In these films, Anthony Lucas sets up an uncanny world by collecting fragments of the real, even dead animals or insect wings, beautifully depicting black and white collages of a romantic atmosphere. But it is in *Holding Your Breath*, his last film entirely animated by hand, where Anthony Lucas sets the basis for his future combination at *The Mysterious Geographic Explorations of Jasper Morello*. *Holding Your Breath* uses traditional multiplane camera, but it also performs a primary approach to

digital composition, which will endow the world of Jasper Morello with a texture close to that of adventure film from the Thirties, like Merian C. Cooper's *King Kong* (1933) — a visual ironically recovered by the digital.

Very often, the animator behaves like an (evil) inventor, assembling fragments into another reality to re-formulate nature. As Paul Wells stands, one of the main properties of stop-motion animation is 'fabrication': 'the creation of a certain meta-reality which has the same physical property as the real world', to think 'an alternative version of material existence' [8]. Notably, Anthony Lucas' attitude is akin to a discoverer or an engineer who composes his own devices by combining residues, branches, small metallic wheels, whatever that projects a proper silhouette or simulates a credible technological environment (Figs. 9 & 10). The latter addition of digital composition and CGI animation brings to the film all sorts of machines, vehicles, even atmospheric effects that enrich the Gothic aspect of this world. Somehow, Czech animator Karel Zeman had a similar approach to the making of a genuine world in his film *An Invention for Destruction* (Vynález zkázy, 1958), based upon Jules Verne's *For the Flag* (Face au Drapeau, 1896), who used a polished animation technique of film exposures and a detailed live action mise-en-scène to reproduce the original illustrations of Verne's books, suggesting a wonderful animated engraving-like film.

**F. 9, 10.** On the right, Anthony Lucas looking for objects to compose his sceneries. On the left, a primary result of digital composition, after using graphic tablet.



The failed intent to develop the film as a series, as his creator initially planned, ironically stresses the originality and uniqueness of such a cinematographic experiment. Subsequent films like John Paul's *Saccharine* (2009) or Andrey Shushkov's *Invention of Love* (2010) imitate in all senses the aesthetic and conceptual basis of *The Mysterious Geographic Explorations of Jasper Morello*.

Meanwhile, the latest work by Anthony Lucas, *My Rabbit Hoppy* (2008), ironizes about some aspects from his imaginary world and, at the same time, extends their ambivalent power: the film is a ‘mockumentary’, a false domestic video where a child develops a ‘Show and Tell’ movie about his rabbit, until the pet hides into a big strange insect cocoon in their house’s backyard — identical to those where Jasper Morello’s insect-monsters breed —, provoking mutations in the innocent animal. The three-minutes film, produced with small budget, is a disturbing and yet comical piece that reverberates the essence of Anthony Lucas’ ‘The Shadowlands’, with the imaginary invading the real.

## 5 • ... As an End

The modernity of *The Mysterious Geographic Explorations of Jasper Morello* consists on its capacity to absorb animated and literary traditions to transform them into something different and unexpected: a marvelous narrative capriccio that simultaneously recalls the cinema of Weimar Republic, the classic age of adventure film, and the complexity of science-fiction — unavoidably linked today to digital images. The film appears as a refined invention, as fascinating as Georges Méliès’ naive tricks: its magic is that of early cinema, a time that joins cinema, animation and experimentation. Anthony Lucas’ film proposes a trip back to hand-made aesthetics and crafts, an Homeric return to home, though it is inescapably contaminated, mutating its DNA into a new form of art.

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# WHAT ANALYTICAL ATTRIBUTES CAUSE A SHIFT IN THE MEANING OF PERCEIVED MOTION ON THE SCREEN?



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## Abstract

This paper attempts to discuss the analytic attributes of transformation from syntax to semantics in perceived motion based on Motion Gestalt. The research proposes motion attributes as practical accounts for implementation or dominance that can cause a shift for a viewer's interpretation as follows: 1) the combination of two dissimilar speeds in synchronism 2) an abrupt direction and speed turn from a regular trajectory and 3) the same starting points to initiate new cycles performing parallel movement.

## Keywords

Perceived Motion; Motion Interpretation; Motion Gestalt; Motion Closure; Motion Good-continuation; Motion Design

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## 1 · Introduction

The key assumptions of Gestalt indicate that the experience of seeing is a reasoning process that moves toward meaningful associations for the object rather than a mere summation of parts. Gestalt, as a theory, is “a device toward further discoveries to see what is really taking place in science [8].” Pierce [5] claimed, “We have no reason to believe that we can unify all things and concepts for which we use a common word. Rather we must seek that part of experience, which can be related. When we have succeeded in relating certain aspects of experience we have a theory.” This perspective might let the critical readers become free from the non-existence of a neurological basis on the psychological experiments [7] of perceptual grouping for Gestalt.

Gestalts, as a viewer’s ability to interpret visual stimuli considering “possible structures for orchestrating positive human experiences [4],” research examining eyes and/or brain tracking to investigate motion perception to apply gestalt theory include Hess and Timothy [2]’s detection of direction-defined and speed-defined spatial contours if they are one mechanism. Results present that contours can be defined by speed or direction; however linking based purely on speed is much weaker than it is for both direction and orientation extending an association field.

Researches from Sabatini and Solari [6] presents a general framework to specify context sensitive motion filters. They define that the interpretation of motion information is more confident if a group of velocity vectors belongs to specific pattern, on the basis of their relationship in a spatial neighborhood considering gestalts.

Motion Gestalt [3], applied theory for gestalt grouping principles in motion, systemized the viewer’s interpretation on moving images on screen that it describes what viewers finally see/ think beyond how neural and visional mechanism interacts for the motion. Based on Motion Gestalt, Motion Good-continuation is measured by syntax of motion behaviors that causation in the sequence of motion states the ordering and relationship to present the visual structure of motion on screen. Motion Closure is measured by abbreviated passages led by the viewer’s interpretation resulting from semantic summarization of the motion event to present the conformity of motion behavior. A research question

for this paper is, “What are interpretive or important qualities of motion attributes shifting human judgment to interpretation and gestalts of motion?”

This research is a subsequent analysis using the same experiment data (the same movie clip and viewers answer) as Motion Closure [3]. The goal is to discover the investigative features of motion for the viewer’s understanding through the delineation of structure and meaning apart. Methodologically, it separates Motion Good-continuation defining structure and Motion Closure defining meaning of the motion events. It is expected that the findings can be practical guidelines for the conceptualizations and processes of motion design on screen and bases for further cross examination in relation to apparent motion and perception.

## 2 · Reasoning and Research Methodology

This research has the following reasoning process: If Motion Closure was true there would be dominance or patterns to summarize motion behaviors regarding interpretation. The research revisits the viewer’s answer as the evidence of Motion Closure and uses the data to emphasize the important structure for meaning. The research expects a new knowledge through a grounded theory analysis for in-depth information to include meaningful and natural conditions of the visual structure for the viewer’s interpretation.

The following outline describes the analysis method and process of this research: 1) open coding: describing a plot to characterize causative logic as Motion Good-continuation and the details of the movement and sequence to identify categories, 2) exploring graphs as the visual descriptions of the movement, 3) re-visiting the viewer’s answer (existing) for Motion Closure, 4) axial coding: matching the answer with the motion events categorized through open coding 5) selective coding: describing and combining the behavioral characteristics of the motion to extract the analytic attributes of the motion from both categories—motion mentioned and not mentioned by the viewers, and 6) integration: translating the phenomena for patterns or dominance with regard to investigative features for motion design as conclusion and discussion.

The followings represent the plot, detail sequences, and



graphs mentioned. The graphs' given positions consist of the x-axis measuring time and the y-axis measuring horizontal movements (x positions) or vertical movements (y positions), and are derivative to visualize the accounts in comparison.

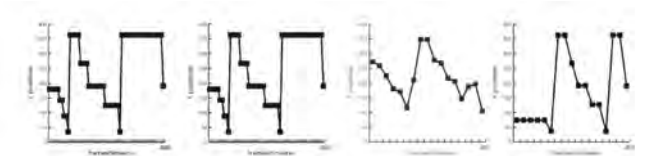
### 3 · Causative Logic and Analytic Accounts

The following presents states as causes (*italics*) and events as effects (***bold italics***) for Motion Good-continuation for regularity in the motion: All objects move back and forth as they ascend, and vertically drop down when they reach the top.

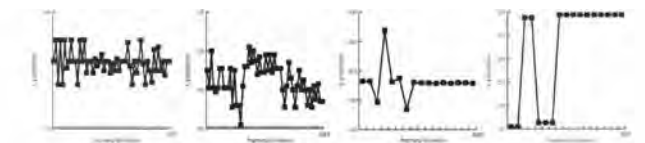
There are multiple behavioral variations to include irregularities and diversities during the cycle of motion causation. It is strongly recommended to view the movie clip at <http://www.motiongestalt.com/closhalf.mov>. The verbal description below represents the details of the movement and sequence. Finally, the movie contains the following features as analytic categories for open coding. Each category is coded as <A>, <B>, <C>, <D>, <E> and <F>.

"Squares stay with back and forth movement in the opposite direction of each other (3a & 3b) throughout the vertical movement to the top (1a & 1b). <A> Circles appear after Squares start to move up and move to the right and left sides at the beginning when Squares are moving up. The Gray Circle goes to the right side, and the White Circle goes to the left side shortly, then they move together to the left side (1a, 1b, 2c & 2d). <B> Squares go up and straight down to the bottom whenever they reach the very top (1a & 1b). <C> The Gray Circle slides to the right side at the bottom right before it goes up from the first dropping off (2d). <D> Circles are moving down in different speed each other (4c). The White Circle is moving extremely slowly after Squares drop off, when Squares are moving back and forth in the bottom at the second time. It's much longer than that of the first time (1a & 1b). Circles move up again right after Squares move up. <E> Circles move together with Squares in the same speed when Squares move to the top again from the first dropping down. Circles stop every time Squares stop for back and forth movement during the trip to the top for the second time (4c). <F>."

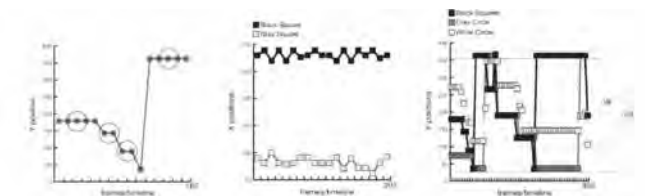
1a to 1d: y position changes  
(vertical movements).  
From left to right 1a. Black  
Square, 1b. Gray Square, 1c.  
White Circle and 1d. Gray Circle



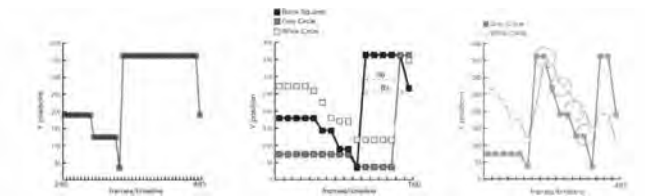
2a to 2d: x position changes  
(horizontal movements).  
From left to right 2a. Black  
Square, 2b. Gray Square, 2c.  
White Circle and 2d. Gray Circle



3a to 3c: From left to right  
3a. Black Square's back &  
forth movement close-up, 3b.  
Black and  
Gray Square's x position changes  
for comparison and 3c. Combina-  
tion of square and circle's y  
position



4a to 4c: From left to right  
4a. Black and Gray Square's y  
position from the frame 365 to  
495, 4b. Combination of squares  
and circles movement close-up  
and 4c. Combination of circles  
movement



**F1.** X & Y Position  
Changes in Time: In  
each graph, x-axis  
measures time and  
y-axis measures either  
horizontal motion (x  
position) or vertical  
motion (y position).

#### 4 · Viewers Answer in the Analytic Category

Viewers response to the movie for Motion Closure were matched with the analytic categories <A>, <B>, <C>, <D>, <E> and <F> as axial coding. See Table 1 for example.

##### 4.1 · Results

Results are organized based on (1) the participant's rate to respond to the motion behaviors (2) the motion behaviors responded, and (3) the motion behaviors not responded, i.e., the entire sentence is from the analytic category with rating.

Behaviors	Code	Response	
		Viewer 1	Viewer 2
Squares go up and straight down to the bottom whenever they reach the very top of the screen.	<C>	... gravity ... goes too fast ... squares were going fast	... the same vertical one, up and down.
Circles are moving down in different speed. The White Circle is moving extremely slowly after Squares drop off, when Squares are moving back and forth in the bottom at the second time—it's much longer than that of the first time. Circles move up again right after Squares move up.	<E>	... falling off something in the air ... circles I think going slow ... falling in water ... spindled in water ... it's different speed ... two different movement ... two different speeds ... they both looked realistic ... they didn't make sense ... two different things were happening, one was fast... the other one was slow ... it was the same objects just two different times.	... two squares and two circles ... gray square and gray circle ... initially they together, and moved to depart ... the outline circle was not fully inlined with the left of them, in the whole time, it was really behind ... timeless feel ... hiding behind ... all of them at one place are moving in unison in a line except this, the outline circle? but still doing same movement?
Response			
Viewer 3		Viewer 4	Viewer 5
... moving up ... going to the top of the screen, and once they touched the top, they're just falling down quickly.		... going up and down ... the squares were so vertical, going vertically	... to the top. ... moving up and down ... moved its way up to the page to the very top ... blocking the way, dropped straight down
... two circles trying to move ... one square was black... that was gray... that was the gray circle with the line		... two circles're kind of following	... following the squares ... circles once the movements were started, a circle appeared with gray ... following the squares that were moving up and down ... another circle... white transparent... just making it in the center, it didn't have any particular movement

T1. Transcriptions in Analytic Category

<A> (1) 20% (2) Square stay with back and forth movement (3) in the opposite direction of each other throughout the vertical movement to the top. <B> (1) 20% (2) Circles appear (3) after Squares start to move up and move to the right and left side at the

beginning when Squares are moving up. The Gray Circle goes to the right side, and the White Circle goes to the left side shortly then they move together to the left side. <C> (1) 100% (2) Squares go up and straight down to the bottom whenever they reach the very top (3) whenever they reach the very top. <D> (1) 20% (2) The Gray Circle slides to the right side before it goes up from the first dropping off. <E> (1) 100% (2) Circles are moving down in different speed. The White Circle is moving extremely slowly (3) after Squares drop off when Squares are moving back and forth in the

(i) Characteristics of motion mentioned	(ii) Motion features mentioned
<A> Squares' direction (20%)	<A> Square stay with back and forth movement
<B> Circles' appearing (20%)	<B> Circles appear
<C> Squares' direction, speed and abruptness (100%)	<C> Squares go up and straight down to the bottom whenever they reach the very top.
<D> Circles' direction (20%)	<D> The Gray Circle slides to the right side
<E> Circles' direction and the differences of the speed (100%)	<E> Circles are moving down in different speed. The White Circle is moving extremely slowly
<F> Squares and Circles' unison of the movement (40%)	<F> Circles move together with Squares
(iii) Motion features not mentioned	(iv) Characteristics of motion not mentioned
<A> in the opposite direction of each other throughout the vertical movement to the top.	<A> Squares' directional differences
<B> after Squares start to move up and move to the right and left side at the beginning when Squares are moving up. The Gray Circle goes to the right side, and the White Circle goes to the left side shortly then they move together to the left side.	<B> The moment, when, and the two circles' irregular and short performance before joining the events by Squares
<C> whenever they reach the very top.	<C> Localization of the event
<D> at the bottom right before it goes up from the first dropping off.	<D> Localization of the event
<E> after Squares drop off, when Squares are moving back and forth in the bottom at the second time. It's much longer than that of the first time. Circles move up again right after Squares move up.	<E> Squares' subsequent events different from the precedent sequences
<F> in the same speed when Squares move to the top again from the first dropping down. Circles stop every time Squares stop for back & forth motion during the trip to the top in the second time.	<F> Behaviors stopping periodically while regular movement keep the event

Table 2. Comparison of Motion Characteristics

bottom at the second time. It's much longer than that of the first time. Circles move up again right after Squares move up. <F> (1) 40% (2) Circles move together with Squares (3) in the same speed when Squares move to the top again from the first dropping down. They stop every time Squares stop for back and forth movement during the trip to the top in the second time. The following section shows a sample reference list with entries for journal articles [1], an LNCS chapter [2], a book [3], proceedings without editors [4] and [5], as well as a URL [6].

## 5 · The Behavioral Characteristics of Motion

Table 2 shows both the characteristics of motion features mentioned (i) and the characteristics of motion features not mentioned (iv) as selective coding. See <C>s, <E>s and <F>s for higher rates.

## 6 · Conclusion and Discussions: What Motion Attributes are Adaptive That Cause Shifts in the Meaning of Motion by Viewers?

Gestalt by means of wholeness in visual perception designates the viewer's ability to group or categorize visual stimuli based on "productive thinking [9]." Motion Gestalt extends the concept of perceptual grouping to time for motion. Motion Good-continuation embodies syntax constructing causative logic of movement in the unfolding process. Clear causation allows viewers to order multiple motion events based on relationship, and the motion is simplified by the causal flows satisfying the viewer's experience for dependable motion on screen. Motion Closure embodies semantics constructing meaning by the viewer's summarization of the events. Gibson [1] mentioned, "Although we have had a succession of impressions, events are perceived as coexisting. What you see is the whole act." In short, individual concepts of motion behaviors are expected to be formulated corresponding with Motion Good-continuation and reformulated into indispensable meaningful structures of motion events for interpretation corresponding with Motion Closure.

This paper attempts to deliver functional motion attributes that can cause a shift in the meaning of perceived motion through separating syntax and semantics. In essence, the research identi-

fies the characteristics of motion that influenced to the viewer's interpretation based on case driven perspectives as qualitative research. Finally, this research proposes motion attributes for practical accounts, applicable for implementation apropos competitive features from complex organizations and for the bases of triangulated research in relation to motion perception on screen as follows.

1. Attributes exhibited in the case include emergent focus on two different speeds within associating features. The two speeds from the two circles, as one of the circles was moving down slowly then extremely slowly, exert the predominant influence by the squares' drastic movement. See <E>s in Table 2. 100% of the participants responded to this attribute. The two squares' back and forth motion at the bottom could be a directional contrast too from the long vertical trajectories—dropping down from the top. However the back and forth movement was not dominated moreover it was made consequently from the predominant attention. On the other hand the contrast of two speeds was fully responded.

Viewers were not consistent. From the gist of the events, they didn't make any attention to the change of event when noticeable contrast of speed was followed concurrently. For practices, the combination of two dissimilar speeds in synchronism during motion events can be considered as a motion attribute that causes a shift for meaning.

2. Attributes exhibited in the case include emergent focus on drastic transposition from usual progression. See <C>s in Table 2. 100% of the participants responded to this attribute. Motion incidents are summarized based on the substantial movement, which is dominant to a sort of gradual change or minor movement. Two squares short back and forth movement and its directional opposition each other repeatedly in ascending order didn't make attention. See <A>s in Table 2. For practices, an abrupt direction and speed turn from a regular trajectory can be considered as a motion attribute that causes a shift for meaning.

3. Attributes exhibited in the case include emergent focus on dominance by parallel movement and the relative spatial adjacency. The two circles were moving up with the squares in

concurrency and with spatial proximity. See <F>s in Table 2. 40% of the participants responded to this attribute. Viewers did not pay attention to the movement stopping periodically when the two circles were moving together with the two squares. See the <F> of (iv) in Table 2. For practices, the same starting point to initiate new cycles representing synchronicity and performing parallel movement, as Motion Common-fate [3], can be considered as a motion attribute that causes a shift for meaning.

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# NEW CREATIVE POTENTIAL IN THE ANIMATION FIELD BY APPLYING UGC CULTURE



A case study of the user generated animation

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## Abstract

Nowadays the User Generated Content (UGC) is regarded as a big source of creativity in Japan. In this paper, we focus on advanced stage of UGC, taking a case study of User generated animation project “Perfume Global Site Project 001” as an example. We assess the potential of Japanese creative scene by applying UGC culture.

## Keywords

UGC, CGM, Creative Commons, Open source, stop motion

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## 1 · Introduction

The keyword “UGC” has already been used as a common word to describe content culture on the web and still remains a hot topic especially around pop culture and subculture in Japan. Recently there have been several changes around UGC culture in positive ways. It is pushing state of the art content culture and is beginning to catch attention as a huge source of creativity.

Generally speaking, user-generated content (UGC), also known as consumer-generated media (CGM), refers to any content edited and uploaded on the web by non-professionals. This has a wide range of meanings, including editions on Wikipedia or merely funny-home videos on YouTube. But in this paper, we focus on an advanced stage of UGC, taking animation culture as an example. We refer to it as User generated animation.

First, we explore the background and history of UGC culture. Next, we report on an open source project as a case study of User generated animation. We made an experimental animation and we report on the making process. In conclusion, we discuss potentialities for content creators by applying UGC culture in creative field.

## 2 · Background

### 2.1 · The Development of UGC culture

Since 2004, the trend of Web2.0 brought more interactive web-communication systems and UGC was born based on this infrastructure [1]. Harvard professor Larry Lessig said Internet users had been “only readers” of websites made by static HTML before [2]. (Although some users tried to express something, at least they should know the way of coding HTML.) Since the advent of Web2.0, technical bi-directionality and automation have allowed read-only users join in “read and write” culture, for instance: blog systems, Wikipedia, YouTube, Facebook, Twitter and so on. Nowadays, people even regard Internet as the platform of self-expression.

### 2.2 · The impact of UGC culture to animation production

The advent of new productive platform based on Web2.0 has transformed both of contents culture and media system.

#### Advent of new production approach and collaboration style

Peer production, was suggested by Yochai Benkler [3], as a way of producing content and services that rely on self-organizing communities of individuals who come together to produce a shared outcome spontaneously. Although the communities included more general-public users than paid professionals, they succeeded brilliantly in a variety of collaborations and developed great software like Linux and Apache. They also offered network collaboration tools and open programs as substitutes for business-made technologies. Eventually it provided new collaborative possibilities for other fields as well, including the animation field. [Table.1] In each production process, there is software available for free (outlined below), which facilitate the entry of beginners into video production and give creators a variety of options for working and collaboration styles.

**T.1** Free Service and  
Open Source Tool for  
Animation Production

Process	Use	Free service	Open source project
Pre-production	Meeting	Google hangout, Skype	Ekiga
	Planning, Plot Edition	Google Docs	MediaWiki, DokuWiki
	Collaboration	NicoNicoCommons, Piapro	
Production	File Share	Drop box, Google Drive	Sparkleshare
	Version management	GitHub, Subversion	Launchpad
	2D Graphic authoring	Pixlr	GIMP, Inkscape
Post-production	3D Graphic authoring	Sketchup, Metasequoia,	Blender
	Music, Sound Effect	SoundCloud	Audacity
	Video Editing	WeVideo	Openshot
Media art	Interactive service	UDK	Uniry
	Programing tool	Quartz Composer	OF, Processing, Pure Data
Distribution	Exhibiting	YouTube, NicoNicoDoga	
	Presentation	Prezi, SlideShare, Jimdo	Wordpress

#### Growing digital ecosystem for creativity

Amateur creators started exhibiting their talents on the streaming-video services and SNS. To begin with, most often they enjoyed remixing ready-made contents, creating parody movies. In their online community, they applauded good challenges between

each other with proactive comments. Better work is referred to in blogs and buzzed more on SNSs. We know the quality of the contents depending on how many people referred to it and this eventually worked as a quality filter. The outcome, which had been made based on open-source services, tend to be shared their materials or skills as a source for next re-creations. Sometimes visually and sometimes technically, an original work diverges in various style of creation.

Nowadays we can eventually find a lot of high-quality improved contents if creativity interrelates and evolves in the digital ecosystem. As a result this situation encourages and promotes amateur's creative activities more and more. As it is now this phenomenon of UGC has actually become a big source of creative scene.

### Application UGC culture to marketing

At the beginning of UGC, Japanese content industry was unfavorable against the web culture because they made a profit by controlling trend and production. They were afraid of their liberal and anarchic style, where content-creators connected to consumers directly and created content in self-sufficient way. They also warned about the possibility of a diminished quality of contents culture.

After some conflict, Japanese content industry realized that UGC had become too dominant to compete. It had begun to collaborate trials with UGC culture. At the same time, they noticed that it would become the best way for marketing. If content is good quality, the collateral information will be virally spread on the network together. Consumers have feelings of engagement with the information because they participate to spread it somehow. It is currently one of fastest marketing ways on the Internet.

April 2012, we joined in an open source project, which called "perfume global site project 001". It is one of the good examples of marketing-applied User generated animation project in Japan. We produced "anno Perfume global", which is an experimental stop-motion animation for it. During the proses of the production, we found some distinctive features of UGC production style from former ones.

## 3 · Case study

Production reports of the experimental animation "anno Perfume global"

In April 2012, the team of Kyushu University and the team of anno lab Inc. released an animation titled "anno Perfume global" on Vimeo as a work for "Perfume global site project 001". The work was made with hand drawing and stop-motion style, but it technically has 3DCG approaches in the process [Fig.1].



F.1 "anno Perfume global" (vimeo.com/40577562)

### 3.1 · What is the Perfume and Perfume Global Site Project 001?

"Perfume" is an electro-pop girl trio in Japan, which is well known among young people for their futuristic concept and performance. With their accomplishments in Japan, Perfume is now challenging the global market and then began new web site "Perfume official global website" [Fig.2] [Fig.3]. To make the news hooks to plug "the Japanese creative culture" in the global media, they launched the UGC project and asked all kind of creators such as designer, engineer, and video and animation artist to participate in it.



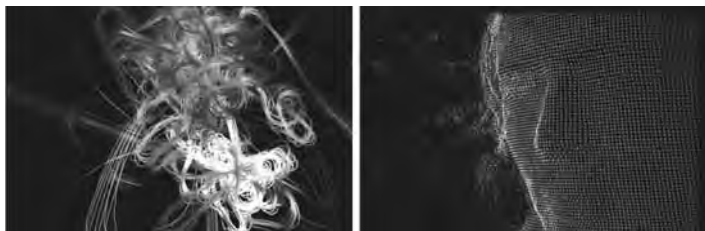
F2. (Left) Perfume: Tokuma Japan Communications

F3. (Right) Perfume official global website (perfume-global.com): Rhizomatiks

In the website, instead of real images of the Perfume itself, visitors can see interactive dancing figures with polygon animation and a lot of kinetic typographies linked by the users' comments on twitter in the background. The website was developed in Away 3D, which is 3D rendering engine of Flash, by Rhizomatiks and Music was composed by Yasutaka Nakata. The project team announced that the motion tracking data (BVH file) and sound data (Wave file) is open as an open-source project with the MIT license [4]. The team put some example data in Open-Frameworks, Processing, Max, Flash on GitHub. They also show some simple examples together.

**F5.** (Left) "White Grove" project by Evan Roth and Ben Engebret (whiteglovetracking.com)

**F6.** (Right) "House of Cards" project by Radiohead (youtube/8nTFjVm9sTQ)

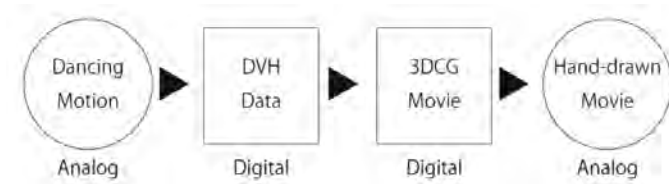


### 3.2 · Start-up and Motivation of the project

Sadamu Fujioka, the director of our project, planned a concept idea of our animation work. Our team has a stop motion artist, Takeshi Usami, who is well known for "Gluebe" which he made using colored glue as a material of animation [8]. Ai nakajima took part of 3DCG motion graphics by Cinema4D. Iwatani Nariaki was responsible for programming. Moe Gotoh, Yoshiko Houkabe, Tomoyo Matsuda, Ihara Masahiro worked as painter of each cel-luloid picture.

Fujioka aimed a new expression to analog conversion of digitalized human-motion animation [Fig.7]. At that point, we had already seen many of prior works which had uploaded for this

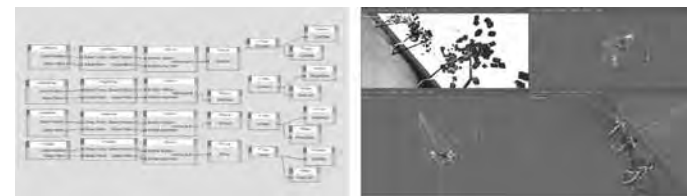
project. They had mostly similar expression style using normal 3D models and 3DCG software. Fujioka wanted to show something more unique and challenging than any of others.



### 3.3 · Production report of the animation

Convert a BVH file in order to be readable by Cinema4D  
We found a problem in the original BVH file. Though the original BVH file had 40 fps settings, Cinema4D read it as 30fps. We got out of synchronization with music. At first, we went to online for any other solution in Cinema4D communities, but we could find only some users' comments "we are looking for someone who could work for it." So Nariaki Iwatani, a programmer of anno lab, made a patch program written in Perl. It converts any BVH frame rate into 30 fps frame-rate using a method of Linear interpolation. He uploaded it and let it all users use as an open-source.

Design abstract expression with motion data on Cinema4D  
"Xpresso", visual scripting system of Cinema4D, enable us a high level of control over rigs, animations and physical simulation. "Thinking Particles" is an event-based particle system based on physical simulation. Combining those systems, we expressed dynamic dancing movement with single hexagon and particles around each dancer's body.



**F6.** "Xpresso" and "Thinking Particles"

### Draw storyboard for camera work and complete the 3DCG animation

We made a storyboard and then design camera work with full-length shooting style, single camera shot without switching to get a more exciting view of animation. of dancing We completed the 3DCG motion animation [Fig.7].



**F7.** 3DCG motion animation (vimeo.com/40796736)

### Render to sequential PNG images and print them out on OHP films

After the rendering of final 3DCG movie, we converted them into 640 \* 360 pixel PNG images for 20 fps animation. We printed out all images on transparent OHP films [Fig.8].



**F8.** Printed images on transparent OHP films

### Draw with glue on each OHP film and Repeat 1616 times

We drew with transparent glue by the “Glue Gun” on each film, tracing printed particles. The ink was melted by the heated mud and distorted the sharp edge of picture. The glue is viscous mud and became embossed solid on the film after it gets less temperature. We drew over and over. Finally, we got 1616 films for postproduction [Fig.9].



### Shoot each frame with Multi-plane camera system

We put drawn films in consecutive serial number on each vertical-layered glass. The transparent OHP film allows seeing through the next and after the next films on layers below. We shot all at once from above. We were inspired by the “multi-plane camera” system [9], which gives dynamic and organic movement to the animation [Fig.10] [Fig.11] [Fig.12]. We import 1616 shots into PC and edit captured film with After Effects.

**F9.** Draw with transparent glue with glue guns



### Complete the animation

Finally, we got a unique and experimental animation, which had digital designed movement and analog designed texture [Fig.13].

**F10, F11.** (Left and Center) Multi-plane camera system

**F12.** (Right) Multi-plane camera system “Advanced thinking by Walt Disney” in the 1950

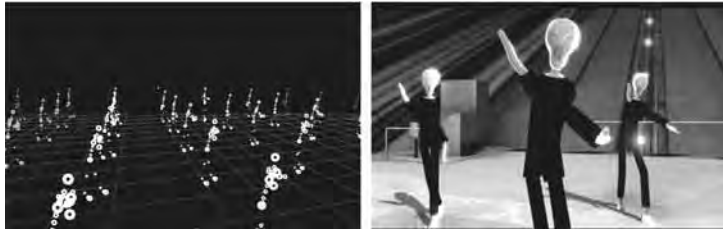
**F13.** “anno Perfume global” for Perfume global site project #001 (vimeo.com/40577562)





## 4 · Outcome assessment and Conclusion

### 4.1 · Pickup some remarkable works and unique approaches



**F14.** (Left) JavaScript based dancing animation. (mohayonao. herokuapp.com/perfume3)

**F15.** (Right) Animation by Miku-Miku dance (nicovideo.jp/watch/sm18242496)

**F16.** (Left) Daihei Shibata & Hiroshi Sato. “Perfume Desktop Disco” (daiheishibata.jp/disco)

**F17.** (Right) Yasuhiro kobari (sepia.dti.ne.jp/bari-kb/pfmGSP.making.html)



Up to the present date (28. August 2012) more than 433 works were uploaded after the first announcement in March 2012. Mohayonao developed interactive animation with 100 dancers by JavaScript [Fig.14]. Takokan made a dancing animation powered by Miku-Miku Dance [10]. He referred commonly-used character from Munch’s “The Scream” [Fig.15].

There are 4 professional animation artist joined officially and we can check their top-class works on the official web site. Daihei Shibata used Cinema4D. He made his 3D project data and all graphic data opened on the web [Fig.16]. Yasuhiro Kobari in Triple Additional Inc. produced dynamic and realistic animation. He used 3ds Max, FumeFX, Krakatoa, After Effects. He also showed production report on the web and explained how to make it [Fig.17].

There are some unique works besides. Mono made an animation with the AR (Augmented Reality) technics by Processing. Anno lab made another work titled “Anno Perfume Training Gypsum” using Kinect and OpenFrameworks. The application automates the process of taking photo, when actual dancer succeeds in posing as same as motion data. After taking each 2819 photo

for all frames, they are combined and become stop-motion video. Yoshizaki made dancing life-sized robot. He used RIC90 robot controlled by V-Sido which if his original Humanoid-operation system for robots.



### 4.2 · Feedback of works

Anno lab made two animation “anno perfume global” and “anno Perfume Training Gypsum”. We made both of production reports in the anno lab’s official homepage. Compared to the other normal days, we got the huge number of access only by uploading them to the Vimeo and a tweet with the hashtag “#prfm\_global\_site” [Fig.19]. We got 3,247 accesses to the production report page of “anno Perfume global” and 4,584 accesses to the one of “anno Perfume Training Gypsum” from 25 April to 30 July. The Cinema4D project file for “anno perfume global” had 133 downloads. Although anno lab locates Fukuoka in southern island of Japan, we got more accesses from Tokyo (3,048) than Fukuoka (1,349) and found global accesses from various locations, Taiwan (46), US (43), Germany (23) and so on.



**F16.** (Left) AR FLAR-Toolkit (nicovideo.jp/watch/sm17758575)

**F17.** (Center) “anno Perfume Training Gypsum” (anno-lab.com/annoperfumetraining-gypsum/)

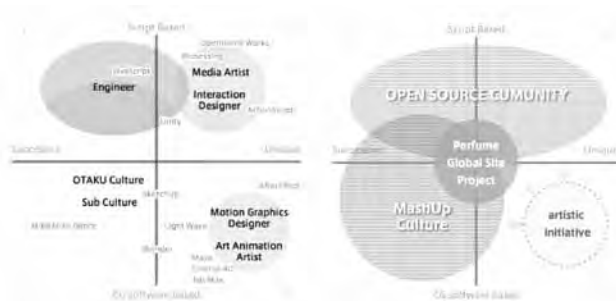
**F18.** (Right) Dancing robot RIC90 (nicovideo.jp/watch/sm18013313)

**F19.** Access log of anno lab Inc. by Google Analytics (25 April to 30 July, 2012)

### 4.3 · Discussion

We chose the 100 most viewed videos from outcomes in this project and categorized them into 4 groups.

We made a matrix using the values of technical solutions in the vertical line and values of relevancy to other works in the horizontal line [Fig.20]. Works in group1 and 2 were mostly made by programmers. Works in group3 and 4 were done with 3DCG software. Works in group1 and 3 were frequently quoted as parts of scripts or materials in the others' works. They are originally



F20, F21. Categorizing by tendency of animation

the core of UGC culture in Japan and were the most active groups in this project as well. Works in group2 and 4 seemed to have a clear purpose for original expression or aesthetic coherence. We found that their behaviors in UGC activity were connected to their development environment (outlined below).

This project brought about a meaningful change by offering opportunity to encounter creators in other categories. Since before, each group has its own cultural preferences and share ideas only inside of a community and seldom mix with other groups. However, eventually “Perfume” worked as a creative catalyst and centripetal force to involve various types of content creators into one project.

Although creators in group4 are of the artist type and tend to keep their techniques a secret in order to protect their originality, some animation artists in group4 had offered their project file or production report in this project. We assume that they followed the way of group1 and 3. Great works by group4 raised the overall level of this project and it became a trending topic in the Internet.

### 4.5 · Conclusion

This paper described the several important changes which brought UGC culture to the animation field. As a case study, we report on actual challenges and assess the feedback as a result of the user generated animation project “the Perfume global site project 001”.

Perfume succeeds in spreading their presence in media virally, together with a large number of user generated animations. On the other hand, content creators also gained a large amount of feedback from the public. We also found an interesting fact that the Perfume as an icon became a creative catalyst which brought the encounter with creators in other categories. As a future work, we would like to research this phenomenon more in-depth. Through this experience, we found both sides had an advantage, for creators and for marketers, by joining the UGC project. Though UGC was warned to have a diminished quality of contents culture before, this project showed the potentiality of UGC culture. The success would bring about new collaborative changes between UGC and business field soon.

### Acknowledgements

We would like to thank Perfume and Rhizomatiks Inc. for bringing exciting project to Japanese creators. We would also like to thank all contents creators who gave us inspirations and motivation through this project.

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Hammerbacher

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[10] “Using dynamic community detection to identify trends in user-generated content”

Rémy Cazabet, Hideaki Takeda, Masahiro Hamasaki and Frédéric Amblard

## THE ROLE OF DRAWING IN ANIMATED FILMS



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### Abstract

Historically, the role of drawing in traditional animation was unequivocal. How has this role been affected or changed by the advent of computer animation, and the increasingly widespread use of digital tools in animation? Can the contemporary animator work exclusively with these digital tools and forego the use of drawing, or are these tools an extension of traditional drawing utensils?

### Keywords

Drawing, Animation,  
Traditional animation,  
Computer animation

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## 1 · Introduction: Types of drawing

Drawing as art: Most commonly, drawing is perceived as being an art form in itself. We have grown accustomed to studying and enjoying the drawings of great masters. In doing so, we are recognizing that the activity of drawing consists mainly in an artistic act, whose end product is deemed to be viewed as a work of art. The artist using this type of drawing as his or her main form of expression is intent on transmitting certain mannerisms, personal aesthetic preferences and his unique form of artistic expression. This type of drawing would be best characterized using the term 'artistic drawing'. In this type of drawing, the act of drawing and the drawing produced by it are ends in themselves. The end product of mark making on a surface is similar to the marks themselves.

Drawing as a communication tool: Also, drawing can be used at a purely communicative level. This means that rather than helping to develop a concrete object, it is used to transmit ideas or concepts (this type of drawing is found in rough sketches architects, designers and filmmakers use in the early stages of the creative process - these drawings are typically very difficult to 'read' by people not familiar with their specific graphic language).

Drawing as part of the design process: The term drawing can also define the whole set of activities that occur before an artistic object is created. This necessarily implies that the type of drawing used to conceive a certain object or idea will usually be more or less hidden when achieving the final result. This type of drawing is frequently found in architectural diagrams, all forms of preliminary design sketches, storyboards in animation and live action films, amongst many others.

Both of the latter types of drawing have characteristics widely different from those found in 'artistic drawing'. They are used to develop or communicate ideas, and the end product of the process they aim and form is usually widely different from the original drawing. Drawing as a 'tool' or as a 'language' [1] constitutes an immense field of study, and can be applied to most, if not all creative fields.

In animation, all three types of drawing are relevant to the process of creation, but one can also define a fourth and final type of drawing, specific of animation: Drawing as movement: This

type of drawing exists when besides the functional types of drawing used to develop an animated film, one can also see elements of it in the final animated film. Drawing as movement implies that individual drawings are put together as frames, and create something new and different from each individual drawing. It is fundamentally different from the other three types of drawing, as it develops through time.

## 2 · Animation and drawing

Following the short definition of the types of drawing that are possible in any artistic product, it entails that different modes of drawing can and usually are used to produce an artistic product. This also holds true in animation. In this context, animation refers to the creation of a short or long film, in which the action derives either from drawing individual frames (traditional or 2D animation) or from the creation of individual frames through the use of a computer software such as Maya or Flash (3D or digital animation). Other types of animation such as stop-motion animation, mixed-media animation or animation based on rotoscoping or motion capture (MoCap) will not be discussed extensively, as at the moment they constitute a smaller body of work than the main types presented here, and the use of drawing in them varies by degrees. This does not mean that drawing is not relevant to the creation process of these types of animation, only that the specificities of its role in the creative process are clearer when comparing traditional drawn animation to computer animation.

To better understand the role of drawing in the production process of animation, one must firstly analyze the process through which an animated film is usually developed.

Many animated films start with a script or story. There are exceptions to this approach, if one considers the work of filmmakers such as Oskar Fischinger, Len Lye or Norman McLaren, who rely more on experimentation and visual abstractions than on conventional narrative. Once the theme or narrative is established, the first step of the development process is usually the production of inspirational sketches. These sketches serve to establish the general mood and feel of the characters, settings and spatial layout. In a larger studio production the task of creating the inspirational sketches is given to diverse artists, usually coming from a fine arts

background and not necessarily working in animation. This allows for a wider range of aesthetic influences and ideas, which will later on be honed down by the production team. This process is usually used both for traditional and 3D animation. In a smaller, more independent production, the artist who produces the sketches is sometimes also the animator.

Storyboarding or framing is a very critical stage of any animation production. The storyboarding process breaks down the script (whether narrative or more abstract) into scenes equivalent to those that will be seen in the final film. This process takes into account what camera moves and angles will be needed to best tell the story. In a larger studio production, specialized storyboard artists usually create storyboards. This does not happen in smaller, more independent productions. This process is used both in 2D and 3D animation, and also in live action films, and as any change during the production stage is extremely expensive, it is vital that the storyboard comes as close as possible to the final film.

Both in 2D and 3D animation it has now become more or less common practice to digitize the storyboard frames and create a timed sequence called animatic - in this moving version of the storyboard, the filmmaker will be able to visualize the timing and rhythm of the film. It is often already set to dialogues, music or sound effects.

The development of characters, if there are any, is also an important step. At this stage, many different design options can be considered, and large amounts of drawings are produced. The drawings that define the characters in a traditional animated film are somewhat closer to the final result that will appear in the film, although lacking the dimension of movement that will only materialize during the animation process itself. In computer animation, once the characters and their features are defined, they can be modeled in a 3D software.

An animated production also needs an artist or group of artists to develop what is known as concept art. This process can occur either at the beginning of the production, while the storyboard is still being worked on, or at a later stage, when storyboard and characters have been completed. It consists of creating a series of visual representations in color, manually or digitally painted, that give a good impression of the final look of the film. For an

individual artist working alone or with a small group, it helps to visualize how the final film will look. In a larger studio production, in which several departments can be working on different parts of the project simultaneously, it helps to maintain a unified look for the film. Following this brief description of the pre-production process of an animated film, it is relatively easy to see that drawing plays a vital role in all stages.

### 3 · Types of drawing in animation

From the early days of animation, drawing has been a crucial tool to develop and represent both characters and stories. In traditional (2D) animation drawing is of course not only the primary tool for developing sketches, characters or storyboards, but is very close to the final visual result. Animators have an advantage if they know how to draw well, and also fully understand the possibilities and limitations of drawing as a medium. One of the most extreme examples of these drawing requirements was found at Walt Disney Studios. Animators regularly drew from life, and attended figure-drawing classes. The graphic language of Disney developed in a consistent and regimented way, and one can state that “The template for classical animation was set by Disney during its ‘golden era’, which established all the techniques for fully rendered 2D animated forms that survive into the present day” [2] The type of drawing developed at Disney evolved into a ‘template’ of sorts, emulated around the world, in which the individuality of the animators was lost in favor of a homogenized drawing style. However, regardless of the formal constraints set at Disney limiting the free expression of their animators, drawing as a technique was highly regarded, and its mastery was indispensable for any animator working there. Walter Stanchfield was one of the most notable drawing teachers of the post-war period at Disney. His lectures were recently published by Focal Press, and in the introduction to this extensive series of exercises, he emphasizes the importance of drawing for the animator: “Drawing for animation is not just copying a model onto paper - you could do that better with a camera. Drawing for animation is translating an action (in this case a pose) into drawing form so an audience can retranslate those drawings back into an experience of that action.” [3] This understanding of drawing as a means to

translate or create an action is unique to animation, as in most art, design or architectural projects created using this medium, a more static approach is usually taken. In this type of projects, drawing usually translates an object or image, and not an action or movement through time. Stanchfield's lectures were based on drawing from life, an approach that Paul Wells also condones, albeit from a different standpoint: "The emphasis on observation in drawing for animation cannot be over-stressed in the sense that it is important to draw from life, and not from an imagination that would have been already colonized by established image forms." [4] In his view, drawing from observation is even more necessary for contemporary animators, who need to detach themselves from pervasive images such as those produced by Disney, which can limit an artist's creativity and originality.

One must now proceed to question whether drawing still holds the same importance as it did in the Disney era when considering the process inherent in the creation of a 3D animated film by a large studio such as Pixar. Since the advent of computer animation, drawing would seem to no longer be the cornerstone for the creation of animation. Digital media have provided a range of tools that can assist in the creation of animation without a single drawing being produced. Still, one must consider that: "Modern technology does make it possible to be an animator without any need to draw. This cannot be denied. Even modern 2D technology enables animation of sorts, where you can draw images straight into the program without ever touching pencils or paper. In some ways, this is very desirable. (...) Can a person be an animation artist without ever being able to draw? Technically, the answer is yes. Creatively, however, I think not." [5]

At this point one also has to draw a distinction as far as digital media in animation goes: It is one thing to speak of a computer animated film, in which the process of animation can be created through templates, models and commands, but which does require little or no drawing; and quite another to refer to the use of digital tools for drawing (such as tablets, or the more recent Inkling device by Wacom, which digitizes a drawing done on paper while it is being made). These are completely different uses of the same technology, and from the standpoint that drawing is essential to the development of an animated film, the use of

digital tools should perhaps not be viewed as being very different from the use of more traditional drawing instruments.

It is however inevitable that the role of drawing has been affected by new technologies: "Computer rendering initially pushed hand sketching towards the start of the design process, only to be used in initial ideation, brainstorming, etc. Now that the use of the computer has settled in, and the benefits and disadvantages are clear, it is time to re-evaluate." [6] This re-evaluation of the role of drawing created using digital tools is as critical in animation as in any of the other creative disciplines.

Perhaps one must perceive the role of drawing in this digital era in a twofold capacity: firstly, as a way to develop ideas (Drawing as a communication tool or as part of the design process), secondly as the means these ideas are realized and brought to the screen (Drawing as art and Drawing as movement). While the first two types of drawing are still widely used, in animation the third and fourth types of drawing are probably not as current anymore, and if they are still used, they can assume new, hybrid forms. A recent example of these new uses of drawing can be found in the Franco-Belgian animated production of *Ernest & Celestine* (2012). This short animated film is based on the children's books series created by Belgian author Gabrielle Vincent. The books featured hand-drawn watercolor illustrations, which the directors of the animated film managed to reproduce quite successfully. They did so in a way representative of the hybridization of drawing in the digital era: "We used software to animate the watercolor drawings. (...) The challenge was to reproduce her thin line drawings all at once, and the Flash technology took care of that. But mainly, the challenge was to color in the drawings to give it the look of Vincent's drawings. (...) It is interesting that we could really keep the watercolor look, and that came from the software we created for this project. It's interesting, for example, that all the animation work that Benjamin (Renner) did was polygraphic, without paper - so it is the perfect marriage of tradition and new technology." [7] The use of a digital tool such as a tablet to create drawings by hand represents the best of both worlds. The production process can be considerably sped up, through the use of computers, but the drawings retain some of the same expressive qualities a drawing made on paper would have. Director Benjamin Renner characterizes the

approach to drawing in this production: “I had already made my mind up to draw very few details and go straight to the essence, with the idea of “animated sketches” in mind that would allow us to focus on the pleasure of drawing without going back over it lots of times. We pursued an idea of free strokes; sketches with strong lines that didn’t painstakingly seek to recreate the volumes.” [8]

#### **4 · Alternate animation processes and the ‘principles of animation’**

Due to the immense task animation presents to its makers, throughout the years some attempts to simplify the process have been undertaken. Rotoscopy was the first of these processes, patented in 1915 by Max and Dave Fleisher [9]. In this process, a sequence that is to be animated is first filmed in live action, and the frames of the animation are traced over the cells of the film. The animator can choose whether he copies the filmed scenes entirely, or if he uses them as a basis for a more personal interpretation. Max Fleisher used this method to create his *Out of the Inkwell* series (1918-1929), featuring Koko the Clown. In this series, and although he makes extensive use of rotoscopy, the main character is drawn with relative freedom. This process was also used in feature films such as Don Bluth’s *An American Tail* (1986). In this story of a Russian mouse immigrated to the United States, although the animal characters were animated by hand, all the human characters were animated using rotoscopy. It can be argued that this technique saves time, but it can have some drawbacks, namely that rotoscoped characters tend to resemble the movement of humans too closely, and are difficult to integrate seamlessly with other, non-rotoscoped characters. This technique still implies that drawing is very present in the process of animating, even it is a type of drawing closer to tracing, rather than to the traditional 2D animators’ ‘drawn from scratch’.

More recently, MoCap (Motion Capture) has started being used in the creation of many 3D feature films and video games. In this process, the position and movements of a human actor wearing a special suit covered in reflective markers are recorded by an array of infra-red sensors, and this information is later transformed by a computer program into any character that the animator desires. In films such as Robert Zemeckis’ *Polar Express*

(2004) and *Beowulf* (2007) this was the main technology used. This technology also allows for actors faces and expressions to be mapped onto digitally captured movement, almost totally nullifying the need for drawings in the stages of character design. As was the case with rotoscopy, there is a fundamental difference between animation based on Motion Capture and conventional 2D or 3D animation - while the former basically translates human movement into an animated format (there may be some tweaking of this movement, but it still is its basis), the latter relies on the skills of animators who create movement from scratch.

For an animated character to be truly engaging he cannot simply mimic human traits or movements, as can be the case with Rotoscopy or Motion Capture. In the early days of Disney, a group of animators strived to create a list of traits and characteristics that would be essential for the development of a ‘good’ animated character. They were called ‘The twelve principles of animation’ [10] and have persisted largely in big studio productions as the rules to follow when creating an animated film. As with most of Disney’s work and stylistic guidelines, and because of their ‘blockbuster’ characteristics, audiences are well accustomed to seeing characters drawn with the twelve principles in mind. This has made their use a must for most larger, general public targeted films or television series. The success of an animated film in the past decades seems to stem rather from a cast of characters designed in the Disney tradition. A typical example of the use of these principles can be found in Warner Brothers’ *Roadrunner* series, especially in the character of Wile E. Coyote. Regarding only characters created by Pixar such as Buzz and Woody in *Toy Story* (1995), *Toy Story 2* (1999) and *Toy Story 3* (2010), Sully and Mike in *Monsters Inc.* (2001), Remy in *Ratatouille* (2007) or Russell and Carl in *Up* (2009) clearly stem from a long tradition of adherence to the twelve principles of animation. Another well-known example is *Scrat*, the squirrel featured in the *Ice Age* films (2002, 2006, 2009, 2012), produced by Blue Sky Studios. This character embodies most of the twelve principles of animation, almost taking squash and stretch beyond the limits of plausibility. In more independent productions these principles are usually not applied, which does in no way mean that the characters portrayed by them are not as successful as those that follow them. For exam-

ple, in Michael Dudok de Wits' *Father and Daughter* (2000) the characters have a very simply drawn traits, in a graphic language close to that of certain types of illustration. Frédéric Back, another independent filmmaker, sometimes works with very simple, almost childlike drawings (*Illusion* -1975), and his characters remain very relatable.

## 5 · Drawing practice in animation

We would claim that drawing is still (if not more) of an essential piece in the process of creating animation, and that if it is abandoned because contemporary technology allows for shortcuts in this process, the final outcome will be poorly made animation films. The question whether drawing is still relevant in contemporary animation has to be answered with a resounding yes. In the development process of animation the relevance of drawing is obvious. It is an essential tool for defining and communicating ideas, and can be irreplaceable in the creation of storyboards and characters. Besides looking at drawing as a tool, one must also look at it as a graphic style or language. This means that apart from being used to develop ideas, drawing can be a personal form of expression, visible in the final format of the film. From Windsor McCay's earliest experiments in animation with *Little Nemo* in *Slumberland* (1911), *Gertie the Dinosaur* (1914) or *The Sinking of the Lusitania* it has become apparent that drawing is a powerful tool to represent either whimsies of fancy such as can be seen in *Little Nemo* or *Gertie*, or to portray actual events in an extremely realistic and shocking way, as was the case with *The Sinking of the Lusitania*. In this short film (it lasts only about 8 minutes) McCay manages to convey a vivid sense of horror and realism. It is quite extraordinary how drawing, and black and white drawing as such, manages to convey such an intensity of action.

The work produced at the Disney Studios shows us the power that a realistic yet stylized type of drawing can have in capturing wider audiences. As stated before, the type of drawing practiced at Disney tended to standardize visual references, which audiences grew accustomed to, and one can argue that this 'habitation' to Disney style is in part what has made their films so popular over the years. Walt Disney took the specialization of his employees to heart: "Some artists have innate (probably optical) preferences for

small, tidy, tight characters, like beetles and chipmunks. Some run to decorative miniatures, some prefer long, limp loose contrivances like *Pluto*. To discover in each artist the caprice he best likes to draw, then to harness that specialty, is just one more example of Walt's determination to use the best available person for every task, even if he has to make that person the best." [11]

Spanning both the end of the twentieth century and the beginning of the twenty first, Studio Ghibli, under the firm leadership of Hayao Miyazaki has used some of the characteristics of Japanese drawing tradition, along with Western influences, to produce delicately drawn films such as *Grave of the Fireflies* (1988), *My Neighbor Totoro* (1988), *Kiki's Delivery Service* (1989), *Princess Mononoke* (1997), *Spirited Away* (2001), *Howl's Moving Castle* (2004) or *Ponyo* (2008). Although the style of drawing of his movies is guided by Japanese animation tradition, Miyazaki quotes animators such as Paul Grimault, Yuri Norstein or Frédéric Back as being some of his main influences. When asked in an interview whether he thought hand-drawn animation will always exist in the face of computer technologies, he answers that "There are so many ships in the animation sea that are computer driven, that I think we can have at least one that's just a log raft that we can row by hand." [12] At Studio Ghibli, drawing on paper is still the main element used in films, and very little digital effects are usually found in their films. As in most larger studios, there is a strict hierarchy and production line, but when comparing this structure to that of Disney, the main difference between Walt Disney and Hayao Miyazaki is that Miyazaki draws a lot and extremely well, and as such is an active member of the animation team. A distinctive characteristic of Miyazaki's approach is that he usually draws the full storyboards for his films himself and his drawings are what the other team members usually use as inspiration and guide for their own work.

Set in a wholly more European drawing tradition, Sylvain Chomet uses a caricatured and exaggerated drawing style to portray his characters in films such as *The Triplets of Belleville* (2003) or *The Illusionist* (2010). In BBC's 2005 documentary *The secret of Drawing*, he states about the stages of his drawing process that "The first thing is basically not to be too heavy at the beginning (...) Light drawing is essential, and then being able to imagine it,



and after that create it from imagination and not from reference. (...) The next drawing is a bit more refined than the one before. You actually put down the detail. (...) And the more experience you have in animation the less you use a computer. Well, you use it at the end, when you want to see the final details.” [13] His approach is that of a draughtsman, carefully stepping closer to the final drawing in each successive layer of marks.

Although a more ‘polished’ style of drawing can be desirable for certain types of animation, and is more frequently encountered in feature length films, in independent animation it can be abandoned in favor of a more expressive type of mark. Animators such as Phil Mulloy, Robert Breer or even Don Hertzfeldt opt to use a cruder type of drawing to represent their narrative, showing a less strict adherence to the usual ideals of representational drawing, such as different line weights or naturalism. Phil Mulloy, in his films such as *Intolerance* (2000) refers to a very rough drawing style, reminiscent of children’s drawings or primitive art. Robert Breer creates abstractions and impressions with a style of drawing evocative of sketchbooks, capturing fleeting impressions and free associations. Don Hertzfeldt drawings remind us of characters in a crudely drawn cartoon, and he often refers directly to the medium of drawing revealing the drawing surface and the pencil to the viewer (*Genre* - 1997). These are but some examples of how drawing can show multiple expressions, some of them not full of realism, and still be effective as a means of telling a story.

In computer animation the role drawing plays is more complicated to determine. It can and should be a tool in the development of animation, but it is not as close to the final product as it would be in traditional animation. This does not make it less relevant for the development process. It can be used in the creation of storyboards, character design and concept art. Without the use of drawing these processes risk being poorly developed because besides all other possible uses of drawing, if it is used as a communication tool and as part of the design process it will facilitate the elaboration of ideas. Drawing also provides for an understanding of the virtual three-dimensional object - it can fulfill both a diagrammatic (planning the space) or and a representational (creating characters and settings) function.

Recently, as far as drawing goes, Pixar has been following the

model inherited from Disney,. This position is marked by Tony White, in his reference book *Animation: From Pencils to Pixels*: “Much of conventional 3D character movement still lacks that special ingredient that the best of 2D animation offers, that one organic step beyond reality that separates the artist from the technician. This is missing because the tendency of 3D animation is to ignore the observing and drawing process. Things are changing, however, principally motivated by the work of the great Pixar studio, which values drawing and the traditional principles of animation when developing personality and movement through the computer-generated medium.” [14] The need for drawing skills in the animation industry: “(...) is a heavily debated topic among stop-motion, 2D, and CG animators alike. The consensus is that everyone needs to be able to draw well. (...) Drawing helps you to think more logically and clearly about where the scene should go. Drawing helps you to see the whole picture. As visual artists, we must not take the opinion that any other art form is useless to us.” [15] In preparation for one of their feature films, *Up* (2009) [16], the development process included a field trip to the Tepuis (a type of table-top mountains) of Guyana, where a Pixar team took photographs and drew the scenery. In the “Art of” collection published by Chronicle books, a series that describes the production process of many of Pixar’s animated feature films, it becomes clear that the use of drawing is still present in the pre-production process of a 3D film. Although the drawing materials can be new, such as digital pencil or ink, most first drafts are started in conventional drawing materials such as pencil, pen, marker or watercolor. Birgitta Hosea comments on this process: “Digital technologies have led to new production processes and reproductive technologies that have changed the material basis of the medium that we call animation. Pencils and paper may have been used in the process, but contemporary drawn animation is more likely to have been created with digital materials. The virtual materiality of drawing with a computer brings into question traditional definitions of drawing. The action of drawing into a computer with a digital pen and WACOM tablet can simulate the marks that a ‘real’ pencil makes, but the mutable world of zeros and ones has a very different material basis than the residue of graphite on paper. The use of virtual materials necessitates the broadening of

conventional conceptualizations of drawing, and drawn animation, to go beyond the idea of pencil on paper and include a range of mark-making activities such as computer programming.” [17]

Many different artists provide sketches, create concept art and storyboards, and it is only in the production stage that drawing is usually abandoned in favor of digital media.

## 6 • Conclusion

It is possible to conclude that the use of drawing in animation is still essential to its success, whether it be in traditional or in computer animation. One must draw a distinction between what is considered ‘computer animation’ on one hand, and on the other of the use of digital media as tools for animation. While the abandonment of drawing in any artistic activity, and especially animation would be prejudicial, one must not deny some advantages that can come from the use of digital tools.

In the case of traditional animation, the role of drawing extends from pre-production to production, encompassing most moments in the creation of an animated film. In computer animation its role remains vital to the exploration and definition of an aesthetic and functional completion of the film, but is usually more predominant in the pre-production stage.

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# EXISTENTIALIST BEING OF *LA LINEA*



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## Abstract

As a form of cinema, animation is not just for entertaining the audience but also for reflecting the philosophical notions. Even if there are dozens of examples; in this paper La Linea is going to be the main subject for deep investigation. La Linea (1971-1986) is an old animation TV series that is drawn by Italian animator Osvaldo Cavandoli. The simple shaped character's each episode has a different story but in reality, it touches to certain philosophical points. French philosopher Bergson's idea of life, which is life's being a continuing line flows uneven, can be easily grasped in La Linea's beginning and his walking way during the animation. Actually, the most significant philosophical point in La Linea is existentialism. The cartoon consists of important French existentialist philosopher Sartre's ideas about being, man and life. This paper mainly focuses on the philosophy of Sartre and La Linea's relationship with the existentialist philosophy. La Linea's story in each episode is an illustration of Sartre's ideas about existentialism. The cartoon also consists of Cavandoli and La Linea's relationship with his creator. In this respect, the cartoon is reflexive and this is not just the hint of alienation but also the determination about the role of God for Cavandoli, as a creator.

## Keywords

La Linea, Animation,  
Sartre, Philosophy,  
Existentialism, Reflexivity.

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## 1 • Introduction

Cinema as a visual entertainment is also a tool for reflecting the ideas of life. It represents the notions and abstractions by showing us the normal way of life. Animation, on the other hand, which can be considered as a narrative form, reflects abstractions more effectively. Most of the experimenting artists and some anti-academics found animation as a tool that touches unexplored things like abstractions, questioning of space and time and geometrical forms and flatness<sup>1</sup>. Most of the directors, like Jan Svankmajer, Richard Linklater, choose to use animation as a tool to narrate the philosophical ideas effectively. Animated films enables filmmakers to be more expressive than any other medium<sup>2</sup>.

Although there are tons of animation examples that consist philosophy, in this paper *La Linea*, which is a TV series that was broadcasted between 1971 and 1986, will be looked closely. The paper first gives the general description of the cartoon and the character. Then it will link the cartoon and especially the character in it with the mainstream philosophers' ideas, like Bergson's philosophy of life and Sartre's existentialism. With this approach, the paper aims to read the cartoon deeply and find the hidden meanings in character's adventures.

### 1.1 • General Look to the Cartoon

*La Linea* is a cartoon series that consists approximately 90 episodes and each has 2-3 minutes duration<sup>3</sup>. The animation was created by Osvaldo Cavandoli, an Italian cartoonist. The cartoon has a simple idea; a character comes into existence by the hand of animator and it exists just as a simple shape. It has no eyes, no detail on his body or any kind of characteristic feature. It comes into life as a simple white line and the story begins with its existence. Each episode begins with the walking of the character. When the line ends that he walks, *La Linea* starts complaining about the situation to its creator (animator). Animator draws either a continuing line or a shape that *La Linea* can explore. Each time *La Linea* starts playing with the new shape, a problem occurs to him. His clumsiness causes him to get injured every time. For example he starts to play tennis with a ball and the ball crushes into him, or when he drives a car, the car either gets broken or crushes into a traffic sign and sometimes he does not like the thing that

animator draws. This occurs especially when the thing he uses or plays ends up badly. *La Linea* talks gibberish. It is possible to hear English or Italian words but it is almost impossible to understand the whole sentence that he uses. However, the audience can easily get what he is complaining about. Cavandoli draws *La Linea* and other objects with a white pen onto different color backgrounds. He gives the clues of the increasing and decreasing climax with changing the color of the background. He strengthens *La Linea*'s emotional status with the color change. As the background turns from green to red the audience can easily get the scene is changing and there will be a funny thing. When the background turns from red to blue, *La Linea* calms down. Cavandoli also uses voice and music to strength the animation but the background colors are more effective than the music. *La Linea*'s each episode has its own independent story. The beginnings and the endings are similar in each episode. It starts with animator's drawing *La Linea* and *La Linea* makes a gesture indicating that he has just woke up from his sleeping. In order to start his journey, he wants the animator to draw the line that he would walk on. He plays with the objects he found in his way and explores them. All of his actions cause him to get into trouble, and this is actually what makes this cartoon entertaining. In the end of the episodes, *La Linea* either explodes or falls down from the line. He comes into being, experiences the thing that he encounters and he diminishes. Cavandoli also creates the challenges and funny scenes from his drawing of wavy line. When the line continues evenly, *La Linea* just walks and explores his environment. But when there are voids in the line, aims or even waves, they increase the rhythm of the animation. Paul Wells talks about the animation story construction in his book and claims that discontinuity in the story line creates the humor. He says "the rational order of the world and the whole nature of the cause and effect must be disrupted by the unexpected"<sup>4</sup>. *La Linea* is a concrete example of this abstraction. There is a line in the animation, and as it gets out of the way, for instance as it becomes a sea or a mountain or a void, the humor comes with it. *La Linea* has problems with this non-linear line and it is the core of the animation that makes it entertaining.

## 2 · Philosophical Ground of La Linea

As it is noted before lots of philosophical notions can be found in animations and La Linea is one of them. The cartoon comes from one of the important cartoonists of Italy, Osvaldo Cavandoli. He uses simple shapes to create his animation similar to another important cartoonist of Italy, Bruno Bozetto. Non-complicated geometrical shapes are adequate to tell a story and even the most abstract philosophical and cultural ideas. La Linea comes into life from a continuing line and the most important characteristic of La Linea is his nose. He has no eyes, no clothes. It makes the character universal. The illustration of La Linea depicts a man that can be seen all over the world and also the language that La Linea uses is gibberish, which strengthens the fact that his being universal. The shapes that Cavandoli draws in the animations are simple too. Sometimes a rectangular shape signifies a box, a tape or a rock. The animator eliminates the cultural or productive attributes of the objects. So in the first place although the audience can have some problems to understand the object drawn, it becomes clear as La Linea starts using the item. The objects have their meanings according to their use-values. The imagination of La Linea and his taking the object according to it gives the audience the definition of the shape. It can be said according to this notion that, using the objects pragmatically, La Linea rejects the commodity fetishism in the animation. This notion can be found in Marx's writings. The production system (capitalism) causes objects to lose their use-value and have different meanings and they are used in accordance with those meanings. Apart from their use-value objects are overrated and people have commodity fetishism<sup>5</sup>. Objects are used not according to their use-values. They are used as an indication of status. They desire to have an object not just for their pragmatic uses but also for their useless attributions. La Linea, on the other hand never desires to possess the object. He examines the object and uses it according to its use-value. The objects that Cavandoli draws have no attributions; they are just simple shapes without any ornament. Not a single object is praised and becomes very important for La Linea.

Apart from that, most significant philosophies that La Linea has are the existentialism and the philosophy of life. Henri Bergson, a French philosopher lived between 1859-1941 and who

wrote about life and man in general, and Jean Paul Sartre, another French philosopher lived between 1905-1980 who can be counted as an important philosopher of existentialism, are going to be the main topics in this paper.

### 2.1 · Existentialism and La Linea

Sartre's existentialist philosophy starts with an essential sentence, which is "existence precedes essence<sup>6</sup>." Existence is the beginning of every act and it is the crucial part of being. In this respect it can be easily said that La Linea's coming into being is a kind of illustration of this idea. His existence is the beginning of the animation and it is the most important part of the animation. Everything begins with his existence. His essence is pure and natural, without detail, so Cavandoli emphasizes La Linea's existence more rather than his essence. When the character starts walking and encounters with the obstacles in his way, Bergson's idea of life comes into mind. According to him, life is a kind of river that flows. It does not have leaps and voids. Man cannot jump from one moment to another. Everything is linked to each other and it is a continuing form<sup>7</sup>. La Linea's way that he walks is the same. He does not jump between the lines. When he sees a space he complains about it as if it is an abnormal situation. He walks and experiences his journey. His trip goes on that continuous line. Sometimes it turns into a mountain or a sea but it flows. This can also be linked with Sartre's philosophy, which has also been affected by the philosophers of life, like Bergson. According to Sartre, to be is to act. There is no knowing consciousness but there is consciousness, which acts, feels, perceives<sup>8</sup>. La Linea is a good illustration of this notion because the existence of the character is the beginning of his act. He comes into reality from a line and his acts, feelings and perceiving of the outside world makes him what he is. The life does not contain a plain road. Although his philosophy shapes itself plainly on being and acting, Sartre also accepts the given environment. As free beings, every action and every choice we have makes us who we are. But there are things that we cannot change, for example the environment. However, although we cannot change the given, we have the ability to change our relationship with that<sup>9</sup>. From this choice of relationship we derive ourselves, i.e. what we are. To turn back to La Linea, the animator draws objects. Those can

be counted as the given world of La Linea. The character does not change the objects but he interacts with them. In each episode he plays with the objects, he decides to construct a way of relationship with his given environment.

Sartre gives an example to make it clear. Imagine a man is having a bicycle tour in the mountain. When he encounters with a rock that plugs his road he cannot change the situation. He cannot make the rock unplug his road before he reaches that point. However he can choose his own act in front of this action. He can either find another path to continue his trip or stop there and complain about the rock's plugging his road<sup>10</sup>. The choice makes the man who he is. For this reason, in Sartre's philosophy freedom has an important role. The man cannot intervene the given world but he can freely make a choice about his behavior when he encounters with a situation. La Linea's story often circles around this example. The animator draws something to La Linea's road. In some parts La Linea complains about the obstacle that he has. While in some parts animator helps him to find a pathway to solve his problem, in some parts La Linea is free to have his relationship with the given object, Cavandoli does not help him. As the animation comes out from an Italian animator's hands La Linea's complaining and getting angry with the situations can be understood as a cultural specialty, however, La Linea always explores the given object without fear. He plays with the object bravely and uses it in accordance with his own freewill. Nevertheless, his bravery often causes him to have a bad experience. His choices during the animation make him what he is. He is curious about the each object and explores them, uses them. For example in Turkey the cartoon is translated as "Bay Meraklı" which is Mr. Curious. This can be counted as an important derivation from La Linea's actions. The character is curious about everything and this is derived from his actions.

Moreover according to Sartre, man cannot be an object outside of himself. He can only interact with it. For example in an episode of La Linea, the character finds the reflection of himself on a TV. First the reflection is also La Linea. However, it comes out from TV and shows that it is another object for La Linea, not being different from a ball or a table. La Linea interacts with the character that comes out from the TV as he does with other objects around him<sup>11</sup>.

The objects in the given world seem similar to each other. The consciousness of the man gives them the definition. The objects find their meanings according to the subject's perception. The world shapes itself via the consciousness. This notion of Sartre can also be found in La Linea. The shapes that the animator draws are simple and can be anything in the first side. However La Linea gives them the meaning. Sometimes he uses a circle as a ball or as a wheel. The world that is given by the animator finds its meaning according to La Linea's consciousness. The outside world is to give them meaning and this can be done only by consciousness. La Linea does the same; he defines the meanings of his outside world and makes them meaningful. For the audience, the objects that the animator draws are simple geometrical shapes. With the help of La Linea, and his consciousness attributions of meanings, the shapes become meaningful both for the animation and for the audience. Moreover according to Sartre, the outside world cannot be consumed. As we cannot change them but change our relationship with the objects, only thing we can do is to give meanings according to our will and consciousness. We cannot negate them or diminish the outside world. The only thing is to perceive and give meanings. In La Linea, the similar situation occurs. Cavandoli draws especially natural features in the animation. There are fishes, birds, trees, seas, mountains and so on. Although La Linea conflicts with all these natural elements, he loses all the time. The nature always beats him. He can never consume the outside world, the nature. He perceives, fights with it and always fails to diminish it. The nature always wins.

While Sartre constructs his existentialist philosophy, he highlights responsibility as an important point. As beings, we have freedom to choose, and those choices make us what we are. In each choice and the way of relation we interact with the object, we are responsible. Each act of the man becomes his responsibility. He has to take that responsibility, because his actions make what he is. Whenever a man confronts with an object outside of himself he makes a choice to act. If we return to the example to Sartre gives about the man in the mountain with his bike, he can easily choose to find another pathway or start complaining about the rock. He can also try to move the rock from his road, or simply, he can choose to do nothing. Whatever his choice is the thing

that makes him what he is. If he does not choose to do something with the object or does not want to interact with it, this is also a kind of choice and this gives him the responsibility too. La Linea bravely makes his choices but as each act causes him to have a problem; he does not want to take responsibility. Most of the time he escapes from the problem or starts shouting to his creator. For example in one episode, he is affected by a woman character that he meets in the animation. He makes everything to be with her. When he accomplishes his wish, the problems start getting big. The woman gets pregnant and puts La Linea in to a house. La Linea does not take this action's responsibility and tries to escape from that state.

The life can be thought as a project in Sartre's philosophy. We always put targets to ourselves to be something. We spend our time and energy according to this target and whenever we reach that target, we are never satisfied. The being is like a thing that searches for itself<sup>12</sup>. It never finds itself but keeps searching for it. Therefore the targets that we put for ourselves seem perfect in the first place. We make everything to reach that target but when we reach that target we immediately realize that it is not what we wanted. For this reason there are so many choices, desires and effort to become something. With each action we try to be the one that we projected, however we never be that way. As we are acting according to our project, we are responsible from our actions. In some points we are refuge to, what Sartre calls, "bad faith"<sup>13</sup>. We do not want to make a choice and take any responsibility. We accept ourselves as we are, and say this is actually what we are. "Bad faith" is a state that prevents us from reaching our project. For this reason "bad faith" should not be a desirable state for Sartre. People have to take responsibilities according to their actions, so that their beings have a meaning. La Linea is a good example for Sartre, because he never shelters to "bad faith". With his curiosity, he never stops where he is. He tries to transcend that position and continues. Simply his walking is a clear illustration of that. He never stops and refuses to walk. He changes his state, his given world and his relationship with the outside world with the help of outside objects. This helps him to construct himself and make his being have a meaning.

In Nausea, one of the Sartre's outstanding novels, there is a

sentence that gives the hint of his existentialist philosophy. Sartre writes, "All existing things born for no reason, continue through weakness and die by accident"<sup>14</sup>. La Linea also born for no reason. An animator's hand draws the shape and it gets alive. He continues his line, walks and behaves existentially, and in the end, he dies by accident. Each episode ends with La Linea's clumsiness and his falling down from the line or exploding. His vanishing from the scene is always accidentally.

## 2.2 · The Role of God in the Cartoon

Another significant part of the La Linea is his having interaction with his creator. The cartoon begins with the drawing of La Linea. Cavandoli's hand draws the character and he continues to draw in some scenes during the animation. La Linea sometimes gets angry and shouts to his creator. Cavandoli's hand interferes and calms down La Linea. He both creates challenges for La Linea and helps him when he is in trouble. Cavandoli creates object of his world when he draws La Linea. The animator remains as a subject as we see his hand. Although the audience sees that the drawing is just an un-living being, a pure object like a table, with its movement, it becomes a subject too. The object that Cavandoli creates turns into a subject. This is the illusion of animation. The pure objects gain life and become subjects of animation world and La Linea is a successful example of this. As we see La Linea is created by a human hand and drawn from a simple line, it can still be a character and a subject.

The relationship between Cavandoli and La Linea is similar to the relationship between human and his creator God. The creator comes into the scene and draws his object, while God helps his creature in some points - Cavandoli's completing the line, so that La Linea would not fall - he also creates challenges - like Cavandoli's creating problems to La Linea, with the shapes that he draws. On the other hand La Linea complains and shouts about the situation that Cavandoli created for him. With the obstacles he draws he both creates entertainment for the audience and defines a role like God's examining their creatures with the obstacles. In episode 215 while Cavandoli's hand helps La Linea from one side, another hand occurs which is in glove and creates challenges from the other side<sup>15</sup>. Although both hands belong to Cavandoli, the

glove hand becomes a devil while the normal hand of Cavandoli remains as a God.

The interaction is in another episode 119 takes another form. La Linea shoots an arrow and arrow hurts animator's hand<sup>16</sup>. This helps to interpret the relationship from another point of view. Although La Linea is a created object for Cavandoli, while he is the subject, La Linea's turning into a subject with its movements and other features they become equal in the animation. La Linea is the object of Cavandoli's world. He can easily change La Linea's situation and interacts with him. On the other hand La Linea is also a subject and Cavandoli becomes an object of La Linea's world. This discussion takes place in Sartre's existentialist philosophy. According to him, when a man confronts with another he tries to put the other in an object form in his world<sup>17</sup>. As he perceives the other and perceived by the other, a conflict occurs between these two. Both are sure that they are the subject of their own world, which is a perceiving being, feeling, acting and shaping the world according to his will. They tried to be recognized as a subject by one another. However both has to recognize each other as subjects in order to prove their own subjectivity. One becomes subject by recognizing the other, and in this process of recognition, they have to put each other in an object form. The other subject has to be the object of another's world. In La Linea, Cavandoli and La Linea are just characters too, which are subjects, but in their interactions, they put themselves in the object position of their own world. La Linea gets angry to the animator, as he does not draw the animation properly. La Linea recognizes Cavandoli as a subject from the beginning but as he shouts to him or gets angry, or hurts the animator, Cavandoli becomes the object of La Linea's world. However, the fact that we see Cavandoli's drawing something into the animation and we recognize him as the subject and La Linea as the object of his world is much clearer.

Cavandoli's hand also indicates the reflexivity in the animation. The audience gets conscious about La Linea's being an object. This is just a simple drawing that an animator draws. However this does not violate La Linea's illusion of life. Audience still thinks that La Linea is a man or a subject. Even if the audience witness to the process of creating, the character La Linea never falls into the uncanny valley. He is a living being. Cavandoli

puts his hand into the scene, not only to indicate the relationship with his creature and his having a role in that process, but also for the alienation effect. The hand in the animation invites audience to get into the animation process. They are going to be conscious about all the animation's being just an illusion. So that the audience do not lost in an illusion. They are aware of the process. Adorno states that every work of art is alien to alienation<sup>18</sup>. However it would be the reverse if it contains reflexivity. The image reflects the production of its own, as it does in the very old example from Emile Cohl, *Fantasmagorie* (1908), or like it is in La Linea, the hand of the animator refuses the illusion. By this way, alienation effect (animator's being in the animation and audience's witnessing to the process) keeps the audience awake during the animation. In each scene of La Linea, as the audience starts losing themselves into the illusion, Cavandoli puts his hand in front of the scene so that it becomes easier to understand that everything comes from this hand and the movement of La Linea is just an illusion.

### 3 · Conclusion

Philosophy can be found in every field of life and as its object is life, it is a normal for it to fill all of our lives. The cinema on the other hand reflects life on the white screen. For this reason, the link between cinema and philosophy is not an unexpected one. La Linea is a simple drawn animation that is loved and watched by thousands of audiences. La Linea's animation series translated into lots of languages and broadcasted in different TV channels. With its simple shape it accomplished to entertain many people.

La Linea's having no eyes and other characteristic specialties make the character more universal. It does not belong to a certain notion although the cartoon comes from Italian animator Osvaldo Cavandoli's hands. In some episodes La Linea can easily play a folkloric instrument like Scotland's bagpipes. Or he can easily become an American football player. The cartoon includes objects from many cultures and La Linea is a simple representation of a universal man who contains many cultures in himself. Besides his being simple-shaped, the objects that are drawn by Cavandoli are also simple. A rectangular or a circle becomes meaningful in the hands of La Linea. As he starts using the items, they gain mean-



ing both for La Linea and for the audience. This indicates two different philosophical notions as it was noted before. One is the elimination of commodity fetishism and indicating the use-value of the objects and the other is Sartre's philosophical notion, which says that, being shapes in the universe around him. The external world is just giving meaning to them. La Linea does the same. He attributes the meanings to the objects according to their use-values.

Bergsonian way of life is also illustrated in the animation. The life flows or continues and it does not contain just a plain road. It has ups and downs. The road that we live in cannot be separated from our past or future because it is just a continuous flow. La Linea's line that he walks on is the same. It flows and has descents and ascents. Moreover, Sartre's existentialism is the most important philosophical aspect that La Linea consists. It starts simultaneously with the beginning of the animation. When Cavandoli creates La Linea, he indicates the important point is actually the being. His coming into life has no reason but as an existentialist being. He explores his universe, gives meaning to them and experiences life. With each choice that La Linea makes, the character shapes himself. He is a free being and makes choices in his path. Even though each choice gives him a trouble, he does not stop or give up. He continues to explore and experience. With his each act he transcends himself, his choices make him what he is.

As being an object of world of Cavandoli, La Linea interacts with its creator. He shouts to him or complains about the drawing that he makes. While Cavandoli helps La Linea in some way, he is also the one that creates challenges for him. This relationship is similar to God and his creature. As creatures we always complain about or live or the challenges we encounter. Sometimes we believe that God helped us to get through a problem. Cavandoli puts himself as a God in this animation. This definition of role as God also indicates the alienation. His hand does not allow audience to get lost into the illusion. It wakes them up from this illusion and invites them to be witness to the process. As we entertain by La Linea and take him as a subject Cavandoli pokes us in some scenes to indicate the whole thing is just an illusion.

Although it is an old cartoon series, La Linea can entertain us today. There is no need to watch episodes sequentially as each

episode's story is independent from others and what creates the humor is the line's becoming wavy. La Linea is a universal character and he is the reflection of us on the screen. He is curious about his environment and wants to explore. When he finds a woman he falls in love, then he does not take the responsibility of his actions and runs away. For this reason La Linea targets adults rather than children. While we can get ideas about life from the cartoon, we also have fun while watching it. La Linea accomplishes both making us laugh at him and seeing ourselves on the screen.

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# LEARNING MODULE IN VIDEO MONTAGE - DRAWING AS TRANSCODIFICATION TOOL - OPTIMIZING THE LEARNING EXPERIENCE



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## Abstract

This paper summarizes the research carried out in the PhD in Design with the project: MUSICAL ICONOGRAPHY USED AS RHYTHMIC MOUNTING SCORE - Teaching module, Conception, implementation and test. The subject of research in the PhD project was an experimental module of learning, testing the hypothesis of drawing as a tool to relate sound and moving image. In the experimental learning module, the students would draw the rhythm of sound creating a graphic score, then using the graphical score as reference they would create different paces in the video montage.

## Keywords

Video montage, drawing, graphic score, transcodification.

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## 1 • Introduction

This paper presents a research conducted in Visual Communication Design, specifically in a borderline between the areas of sound, moving image and learning, aimed in developing a learning module in relating music and moving image, developed in a learning setting in high degree education level. The learning module introduced visual communication students to the issues of relating sound and moving image by drawing and sketching. The students did not have earlier contact neither with sound neither with the moving image thematic. In this learning module the drawing and sketching, functioned as new tools, for reinforcing, and create associations with new concepts related to sound, and video montage. The study took place between 2008 and 2011 in the Applied School of Arts - IPCB.

For this study development were very important the collaborations of the following teachers; Marina Estela Graça Gonçalves de Vasconcelos - teacher coordinator | School of Education and Communication, University of Algarve, Eduardo Fernández Herrera - Professor | Faculty of Fine Arts, University of the Basque Country, Fernando José Carneiro da Silva Moreira - associate Professor with aggregation | Faculty of Architecture of the Technical University of Lisbon. Due to the length of the study this paper presents a condensed version of the research sequence in the following chapters; the concept motivations in the Theoretical Context section, the goals of the research experience in the Objectives, the activities sequence carried out in the research experience in Main Quasi Experiment. The proposed Learning sequence is the last contribution of this study, and the Findings presents the results of the research.

## 2 • Theoretical Context

The audiovisual synchrony is a contemporary subject of great interest in the context of music videos and video promos. In many of these cases, the sound experience lead the image, the soundtrack can change the movement perception within the animated sequence of frames. The visual narrative sometimes is not continuous, giving several interpretations that change, according to the deviations of both the attention focus, from the soundtrack for the video and vice versa.

Music Videos influences the modern cognitive perception between sound and the image (Fahlenbrach, 2002) [4]. These products are widespread and easily assimilated by everyone. Such audiovisual messages exercises and stimulates the ability to relate sound to images. The music video videos establish certain cognitive behaviors, visible in the expression of visual imagery. It's crucial for students of Visual communication Design to establish a approach with this relations when producing audiovisual contents. Because often the students don't have musical training is fundamental to explore another approach when accessing the music comprehension and expression. The hand gesture present in translating the music sensorial elements to drawing allows a link with the unknown message.

The space in which the gesture intervenes, is a metric space where a pattern generated by a mental image built upon a sound recording, creates a musical iconography (Martin, 2006) [7] or more complex graphic compositions (Tan & Kelly, 2004) [8] developing rhythm perception using graphic symbols like points and lines, can create simple representations of rhythm (Bamberger, 1982) [1]. These typologies used in low-level mapping, produce excellent relations between graphic elements and music (Solis, 2006) [11]. The audiovisual montage and synchronization can use these graphic elements, to communicate the connecting elements, pauses and ruptures constituting a musical iconography. In the video montage, within the sequence animated of frames the pauses and ruptures in the connected elements deal with the subject of continuity.

Continuity is abreast to discontinuity; the continuity, and discontinuity can characterize a moving sequence of frames perceiving the motion in continuous time. An animated sequence of picture frames builds the illusion of time duration at the viewer, managing to gather one experience from continuity fluidity till the complete fragmentation (Graça, 2006, pag. 135) [6].

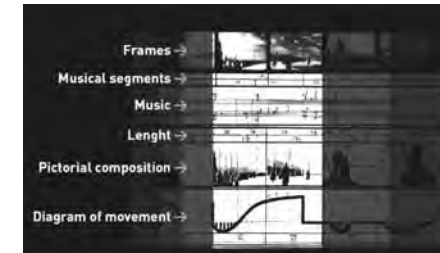
When addressing the continuity/discontinuity of the picture frames the question of succession of image frames and its rhythm value arises. When defining pace is necessary Plato definition, on the grounds of "ordering the time duration" as a metaphor, possible to represent in the regular motion of ocean waves upon their advent to the beach (Graça, 2006, pag. 156) [6]. We can contem-

plate the Rhythm as an organization and a language of continuous, has an umbilical link to the human essence, where the metric foundation got lost to the poetic flow (Meschonnic, 1982) [10]. The variations of intensities can also delineate the rhythmic flow, emanating in its expression of various forms of language. Norman McNorma McLaren addressed the theme of relating sound and image in his work, in his movie *Mosaic* (1965), McLaren created the soundtrack using a drawing technique, erasing the upper layer of the 35mm film. The author erased the black color emulsion with the aid of a small knife, to leave small marks, then, used a small optical reader in a Moviola machine (a projector machine) to read those marks and produce percussion sounds. McLaren explored concepts of animation and synchronisms between sound and image. The variations in size and shape in the graphic marks affected the sound, tone, volume, and the sound quality. Using this method Norman Mc Laren produced an extensive variety of sounds.

The attempt to create a parallelism between a rhythmic sound recording and the moving sequence of image, is visible in the work of filmmaker Sergei Eisenstein. In it we can find another stimulus for this project in his theory of vertical melodic montage, in the relationships made at descriptive graphical structures of rhythm present in the image frame and in the musical score.

Synesthesia, the mixing the senses of perception fascinated Eisenstein throughout his life (Bordwell, 1993) [2]. During the 1930s, Sergei Eisenstein rebuilt his concept of montage, as responsible for an organic unity in the language of film. His interest in synesthesia and the wish to include sound, in his organizational theory, made him develop the theory of vertical montage. For Eisenstein there was a guiding principle common to both models of senses, vision and audition, allowing the development in parallel of construction techniques and audiovisual messages. To Eisenstein, this principle was the movement, this element within several physical manifestations, would be the basis of the vertical mounting (Bordwell, 1993) [2]. Thus, Eisenstein suggested four types of vertical montage; metric, rhythmic, melodic and tonal, described in his book "Film Form and The Film Sense."

In the example of the battle scene on the film *Ice Nevsky*, co-exist a harmonic series of image frames cuts with the musical pace and musical points of emphasis (Fig. 1).



**F1.** Segment of Nevsky graphical score

These notions of sound and image relations were very important in the teaching/learning experience in this PhD research, putting in evidence two types of visual shapes; the visual shape of the frame and the "sound" shapes in the graphical score. In the context of our research the use of drawing as liaison of sound and image in movement settings enhances the relation between the two media. The drawing may record the various music rhythmic variations. In the drawing the points and lines cadence, suggest a rhythmic record used to produce different juxtapositions of image frames in the video montage.

In the experimental context of the research the students represented the music by graphic means. The graphical score has predominately qualitative information used then by the students as a reflection about the rhythmic qualities suggested by the lines and points sequence.

These are elements of great relevance in learning practices when introducing the video montage, is however necessary to find new forms, to unite these two worlds, the video montage and the sound in a model compatible with the practices of visual communication design.

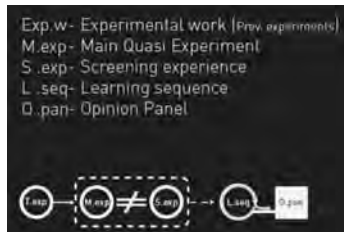
In the context of creating a learning module, the framework in the context of teaching bLearning (Blended Learning) is extremely important, by searching for references in more traditional attitudes and postures, moreover assimilating them in a modern context of teaching / learning.

In this study the sound leads the visual experience, in the frame the information retrieved from the sound may manipulate the image, occurring then a "control" of sound over image.

### 3 • Objectives

The aim, of this work was to create an experimental module dedicated to the processes on interpretation of musical rhythm as video montage conductor. Based upon the experiment in a new context for teaching and learning, exploring strategies for implementing online, this study had two goals:

- Conceive an experimental Learning module, where drawing functions as interpretative record of musical rhythm as guide of the video montage task and;
- Validate in bLearning context, through comparison the experimental teaching module and the traditional teaching module.



**F2.** Research design, research conducted between 2008 and 2011.

The test of the Learning module used a contrast experiment between the experimental module with drawing as an interpreter and the traditional module without the use of drawing. The Learning module tested in the Main Quasi Experiment and after validated by the opinion panel served as reference for the Learning Module described in this paper (Fig. 2).

### 4 • Main Quasi Experiment

The Main Quasi Experiment organized in two weeks, had five classroom sessions. The sessions included the theoretical references, practice, and results. The module distribution in the experimental and in the traditional models, followed different strategies but both used bLearning settings. The experimental learning module, tested the hypothesis of an auxiliary method to video montage, the drawing of sound rhythm as interpretation of the rhythmic information (rhythmic variations of the musical piece) as an annotation tool, using the sequence; listening, draw-

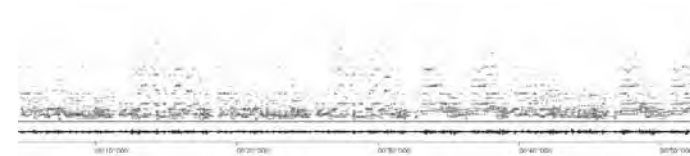
ing, and video montage. The traditional module applied the sequence; listening and montage, without the drawing as rhythmic interpreter. The experimental module followed a D.E.S (Dramaturgic E-Learning Strategy) to create a field of symbolic relations between tools and techniques related with expressive values. The two modules used the same videos and musical segments distributed in the eLearning platform adopted by the school.

In the Main Quasi experiment the two study groups worked with the same videos (Fig. 3) And the same sound segment; however, only the study group A, the group testing the experimental learning module, used the score, and the drawing technique.



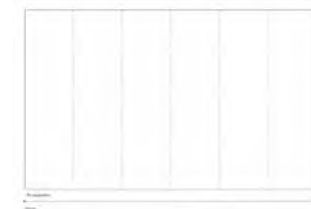
**F3.** Images frames from the different videos distributed to students. Videos from the Prelinger Archive, the public domains from this archive allows the free download and reuse.

The musical segment used belonged to the piece by Mozart - Clarinet Quintet In A, K 581, "Stadler" - 4.Allegretto Con Variazioni (Fig. 4).



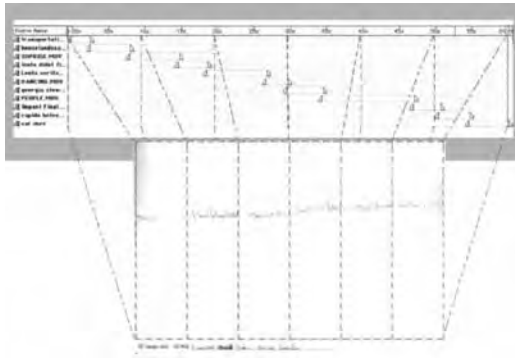
**F4.** Music segment sonogram Mozart: Clarinet Quintet In A, K 581, "Stadler" - 4. Allegretto Con Variazioni. Position of segment and interval - 4:00s - 4:55s

The students after listening the musical segment, played three times, performed a musical representation, using as drawing representative elements: lines and points. The students draw their representations on a spread sheet divided into six sections, representing 60 seconds (Fig. 5)



**F5.** Graphical score used in the sound interpretation.

Afterwards the students using the drawing as an editing guide, carried out the montage in a 60 seconds video. After gathering the students digital files, the teacher analyzed the drawings by comparing, the several representations of sound intensity, with video segment distribution in the digital tool timeline (Fig. 6).



**F6.** Relation between the graphic score and the video montage using the Adobe After Effects video timeline.

The activities related to the monitoring of the experiment in the observation, happened during a period of two weeks. Divided into three phases; introduction and motivation, development of exercise, and finalization. Simultaneously there were activities of sharing auxiliary materials and support.

Although, the LMS (Learning Management System) platform used by the school, was not compatible with the latest programming language standards, not allowing the import of XML data. The learning module organization as a tool with possibilities to export to a contemporary system was a concern. Therefore the learning sequence followed the IMS-LD standard. IMS-LD is an acronym for Instructional Management System - Learning Design a standardized system resulting from a research project with the aim of building a semantic system, an Educational Modeling Language - EML able to represent learning units used in e-learning.

## 5 · Learning Sequence

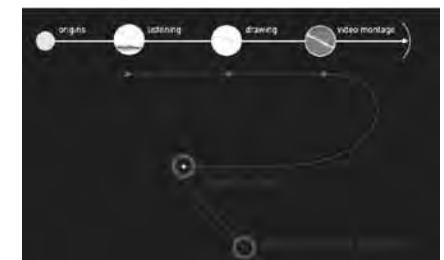
The organization and strategy for designing the experimental learning module, resulted from associating boundaries of distinct areas of study, as well as a construction route able to motivate and engage the student's attention. It is vital to stress the test

sequence importance and the chain of learning materials and practices, which is the core issue in the learning sequence. The base materials used in the exercise of video montage, videos and sounds may differ from one exercise to the next. Because that is a non controllable variable of the quasi-experimental procedure applied in this research.

The strategy proposed in the learning sequence (Fig. 2) resulting from the research, uses an exercise of expression of sound through drawing. There is, a pragmatic perception of its implementation delimited in an introductory stage in learning the relations between sound and video montage. The expressive values produced by the drawings are expressions of personal level with expressive qualities, valid only for the author of the drawing. The module has, as limitations, the inability to create settings for direct synchronization between sound and image, but it allows a deeper reflection about the rhythm perception and how it influences the apprehension, of movement in the pace of the animated sequence of images.

From the study resulted a learning sequence proposal possible to apply in introductory studies in the video montage. The learning sequence involves four stages. In the first stage "Origins" the students consult and discuss theoretical references, (authors relevant to synchrony between sound and image), in the "Listening" stage the students listen the musical segment and then in the "Drawing" they express their sound memory in a graphical score, afterwards, the students create the "Video montage", using video segments earlier distributed in the class. The cryptic element created by drawing and the link with different subjects constitute a continuity between listening and montage, that cryptic access allows the future applications of a transcodification technic (Fig. 7).

**F7.** Learning sequence, proposed model.



The drawing is a part in a dramaturgy strategy, inserting a cryptic element in the Learning path, in analogy; telling a continuity, a narrative organized of lines and points a personal interpretation, a story built on the emotional experience acquired from listening to the sound segment. The drawing has a D.E.S. Method (Dramaturgy's Elearning Strategy) function in a directive that could improve the emotional experience retained by the student. The D.E.S. method follows assumptions that dramaturgy contexts are more engaging; facilitates intrinsic motivation and results in positive emotion during learning (Burmester et al. 2005) [9].

## 6 • Findings

On the hypothesis developed and applied in learning environment blearning. The exercise of expression by drawing used in context of the experimental module of learning allowed an easier relation to the fullest and took advantage of the map of relationships sparked throughout the exercise. When conducted in a bLearning environment, the method allowed the student an easier construction of relations by the use of metaphors. The practice of the experimental model also allowed parallel paths, where students went through another type of relations and perspectives instead of the traditional model characterized by a linear sequence.

This practice made an indirect approach procedure, because the final montage of the video in the exercise was not the only purpose but rather a strategy to open new paths for other connections. Within the experience scope, close to the specific context of the exercise, occurred a crossing of two resources, one based on a personal interpretation as a record, the other constituted by relations constructed between the interpretive drawing and other theoretical references, felt, but still not understood by the student.

The adventure of discover was an appended value when using one dramaturgy's model of learning as the model D.E.S., this symbolic value, was instrumental in driving the experience, accomplished through the intersections analogous with representation of qualitative information (about sound, and rhythm of moving image) and relation of tools and concepts.

The symbolic element, was prominent and unifier of intuitive listening and montage, accepting the rhythmic elements without using a metric system. In the experimental model the drawing

functioned, in creating a rhythmic score allowing the record extrapolation into a video montage, a guide in creating an animated sequence of image frames. Offering a new way to understand the process and foster in a near future other transcodification processes mediated by expressive tools. Having successfully produced better results, compared to the traditional model, based on a linear and sequential strategy without symbolic marks.

Although the limited sample of students, material makes more difficult to generalize the results we found results pointing the experimental module, as a more captivating process, it allowed a greater adhesion by the students to the few hours of contact available by the teacher. Further in the future we will repeat the research with a larger group of students, media and sample variety.

This research is a contribution for future developments in new educational practices, applied to the area of visual communication design.

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## DRAWING AS EXPERIENCE



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### Abstract

*Drawing as experience* is a research paper that highlights the fact of drawing as a multisensory way of living, i.e.: 1)- observation and analysis of reality and 2)- its creation place and atmosphere. At the same time, there are other contents related to this as its portable reality and the act of drawing anywhere, everywhere indeed, - its emotional and poetic quality, - absurd and random, daily reality and, - its multi and interdisciplinary nature. To conclude, this study will be complemented by a guide about international creation centres, places of exhibition, grants and competitions, etc. of contemporary drawing.

### Keywords

Observation, action, place, multisensory, intimacy, contemporary drawing.

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## Introduction Contextualization

When one draws, one is enclosed in itself, or one interacts with reality thinking of the generic or the main details that are surrounding him/her. In any case, these are ways of thinking and understanding the places where we are living more intensely than in a usual manner. One only knows how it feels drawing if he/she is engaged in it. So, from the point of view of creation, in my own theoretical and practical research as emerging artist; I started to study this multi-sensory experience of the practice of drawing a few years ago. Now it is one of the central themes of the PhD I am writing.

The reason why I use Drawing as experience as title is, among other things, to make a special reference to the spirit and approach of the book *Art as experience* written by the English philosopher, psychologist and educator John Dewey. He defends a sensitive attitude where all our senses should be part of a total artistic practice. According to the author, this way of being in the world increases our capacity to act and understand what we are dealing with. Art as experience invades completely everyday life, this philosophy achieves a continuous exchange and fusion between art and life.

Therefore, the interest of this research focuses on everything that surrounds the act of drawing. What things come to mind when we are drawing? Which ones affect us consciously and unconsciously? The process itself, and beyond a predetermined end result, is especially important. Drawing implies a very high degree of concentration at many times, you can lose track of time and space. One can fly. On the whole, we feel comfortable drawing as a natural state of expression, so natural that sometimes it seems to be another more extension of our own anatomy. This is the usual sense. You do need neither paper, nor a notebook, nor even a pencil to draw. Wherever the place is, and without warning, the picture emerges. Our minds sketch the extraordinary gaze of the little things of everyday life.

## 1 · Observation and Analysis of Reality 1.1 · Pay Attention

Anything you see, even being seemingly insignificant, is likely to be a good model to draw. We only have to pay attention. In his work *Theory of the state 1*, the Spanish writer Andrés Ibáñez talks about the state that our mind need to create. According to him, an artist (either novelist, dancer, instrumentalist, theater director, filmmaker, etc.) must be in a certain state at the time to get to work. This state allows us to create, it is also transmitted to our creation, and which will be received by the reader, viewer or listener. So, not only must exist a direct observation of reality, a multi-sensory experience, a selective gaze, or improvisation; there should be also a specific state of mind to create. In this manner, we can transform an unnoticed thing in an extraordinary one. This change and state of the mind to create is based on our implicit knowledge and our own sensitive attitude to know and interact with the visible and invisible reality that surrounds us.

## 1. 2 · Direct Observation of Reality

During the different stages of the history of art, there has been a particular interest in direct observation of reality. All kind of *devices or machines to draw 2* have been used to achieve the greater verisimilitude. The young American artist Langdon Graves, currently still uses magnifying glasses to acquire a highest perfection in her drawings.

However, at the end of the nineteenth century there is a real consciousness of the act of creating in the place where you have your natural model. After the appearance of the photography, the meaning of artistic creation begins to change. For example, it should emphasize the study of some theoretical and writers of the Naturalist movement, such as Emile Zola, which take place at this time. Direct observation of reality involves being face to face and nude in front of the model we want to represent. In visual arts, although there was no particular school, naturalism serves to designate realistic tendencies whose aim was reflecting more authentically in everyday reality.

Moreover, there were other similar attitude in the French and European artists in this time, they called it *au plein air 3* (it means in the open air). They also were interested in observing the

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2. Gómez Molina, J.J. (coord.) et al.: *Máquinas y herramientas de dibujo*.

3. Cézanne, Los grandes genios del arte Collection, El Mundo's library, p. 20

4. Sketchcrawl born from the idea of drawing in group on-site: <http://www.sketchcrawl.com>  
<http://urbansketchers-spain.blogspot.com>

immediate environment around them everyday, but the fact of building images outdoor had a strong presence in the results. That is the reason why the painting evolved and began to deconstruct its hyperreality as well.

The painting au plein air reaches the best popularity in 1870, due to the fact that paint in tubes was introduced in this time among other things. So this technical advance, was linked with the manufacture of the firsts folding easels and small format briefcases. All of this details did possible the act of painting and drawing at the site. Barbizon School, Newlyn School and the Impressionist movement were the main proponents of this technique in the last years of the nineteenth century. There were also Russian painters interested in this way of doing in early twentieth century, in addition to the American Impressionists. But the history of painting and drawing outdoors did not end here, since it remains in force in the twentieth and twenty-first centuries. Nowadays there is a great interest in the action and drawing in the natural-real space. Sketchcrawl movements 4 around the world organise events to share experiences au plein air in big groups.



**F1.** Raimond Chaves,  
24-hour Drawing,  
street shed, Barcelona,  
April 2000.

The Colombian Raimond Chaves is one of the best-known contemporary artists who advocates and practises drawing between the individual and the collective, exploring the practice of drawing in real space. He defends the pleasure of drawing, the joy of the process, the context to which we belong when we are creating, our 'here and now' and the fact of facing an unforeseeable future. As an example, his 24-hour Drawing's project can be mentioned. This piece was presented in Barcelona in 2000 for the first time. The artist installed a booth in the middle of the promenade of La Rambla. In this place there was a team of young volunteer

artists that were available to draw for 24 hours, coming into direct contact with the social context and space around them. There were conversations with random models, who were free to make specific requests, posing, etc. The starting approach was a pretext for settling into what could happen in the place. Unpredictable things can appear suddenly.

In general, all these references in relation to the direct observation of reality, have as a fundamental interest the fact of looking for the purity of immediacy that is in front of us in a common day. This idea is the focus of this research, but not in the sense that we have to get a realistic outcome as a sole purpose. What really matters is capturing the ephemeral manifestations that happen around the atmosphere where you are drawing, as the Impressionist creative thought and current artists who are drawing, recording video, performing, etc. The author can stay at home, in the urban space or outskirts in order to get unexpected situations that are impossible to deal with in the artificiality of the studio (understood as a work space away from the model). Although one can talk about and study the everyday as a topic in the distance, without being on-site, in my view the coexistence and introspection on the stage of the action is necessary to understand it.

### 1. 3 · A Selective Look of Things

Wherever we are drawing, we observe many details. So many that the eye intuitively selects something, but not all, it would be impossible. In any multisensorial experience exist many stimuli, so that a synthesis is necessary.

The psychologist Rudolf Arnheim, in his book *Art and Visual Perception: A Psychology of the Creative Eye* describes how we perceive, and why the vision of the human being is characterised by grasping and capturing the essentials. Specifically, he emphasises that if an observer of average sight wants to examine an object carefully, he/she will have physical qualities which will allow him/her to see the tiniest details. However, the visual perception doesn't occur with the mechanical fidelity of a camera, but it records all partially.

So... what do we really see and when do we see?  
On the one hand, human being has various physiological reasons that make us see in a certain way the reality we have in front of

our own eyes. On the other hand, there are also cultural reasons and particular interests or obsessions. There are many artists that show us a fragmented reality in order to convey feelings through isolated elements.

Toba Khedoori is a good example. She creates mural-scaled drawings, without interference. That is, neither crystals nor other obstacles in the perception of her images drawn. They are large formats in which the paper stays clean (in white), only intervened by small details like gravel, logs, furniture, sugar cubes stacked, etc. All of them with a very hyperrealist appearance.

In the same line as Toba, we can find some drawings by Michael



**F2.** Toba Khedoori,  
Untitled (Logs), oil and  
wax on paper, h: 141 x  
w: 180 in / h: 358.1 x w:  
457.2 cm, 2006-2007.

Landy. Both of them focused on figuration and fragments, but in the latter case on smaller formats. One of his best known pieces is Barbie Comb, the comb of this famous doll with hair remnants that look human. And talking about hair, there is a particular obsession by some artists on this motif. So they focus almost all of their work on reproducing a lot of types of hairs/hairstyles in the most accurate way. Winnie Truong and Hong Chun Zhang use in a very special way this reference element. The Canadian artist in full-color and the Chinese one in black and white. Both styles of drawing acquire a surreal character.

## 2 · Its Creation Place and Atmosphere

The extraordinary in the everyday can arise anywhere, and anytime. The Eureka (I found it!) occurs wherever we are, without saying anything. So, the pieces can be made on-site right now, or later, returning to the scene that has inspired and seduced us (although the specific motif can change). We can also write down or memorise, this way we can follow it in our studio.

Anyway, the spirit that lies behind this type of creative process takes place in the *inhabit among things*.

There is not a unique place to create, there is always more than one. You can be at home, outside (in an urban or rural context), or different possibilities between the two before.

Neither should exist a specific time for observation and contemplation, we should be free to hear those things we can find in ourselves or outside. It means that we have to live and enjoy the extraordinary snapshot of something that is happening, intuition and random in a chance encounter.

Any place can be a studio implies action, improvisation, dynamism and game. But at the same time, introspection and intimacy with the mental and physical space we inhabit. The Spanish artist Juan Carlos Meana, in his book *The space between things*, talks about the importance of the studio (or place of creation) as place to develop the construction of a thought. In addition to carrying out a practice of artistic creation, we also analyse conceptually and theoretically what happened during the process. Nothing is innocent, despite improvisation and immediacy. Unconsciousness that comes into play is a decision-making with a theoretical and vital support of previous knowledge and experience. As Meana repeats in more than one occasion in this text, what manages to turn the usual into extraordinary is the attitude of know pay attention. That is, look and let objects that surround us and emotions (loneliness, love, intimacy, etc.) look us. Magic of creation is born of complicity. It can be said that prowl, transit and inhabit places or ourselves; can load objects and ideas of our gazes. There is a hidden order, a visual memory, and a latent reality that is waiting for us to create. It is a suitable and rich atmosphere of everyday routine in which art and life merge and complement. And in artistic practice, action and relational aesthetics; act as a means of display and communication common to many of the other disciplines and media.

### 2.1 · The Studio: Inside and Outside the Home

Any place can be a studio, and consequently, any place can be the scene and reason for our creation. A creation space can be an atmosphere more or less transited and lived, more or less close to us. It can be in a warm and intimate home, or in an urban or rural

5. Augé, M.: Non-Places: Introduction to an Anthropology of Supermodernity.

outer space, and even in a non-place 5. The latter can be an airport, a station, a hospital, a hotel, etc. The French anthropologist Marc Augé began to think and talk about it. All of these places that Marc has studied are full of artificiality; they are occasional places to live, to wait, to visit. So, there are spaces that can be inhabited by us periodically with an everyday behaviour and we also can have this behaviour in a remote space that we inhabit for a few hours during a trip.

Home, sweet home? Normally, our most common creative space is a room of our house or in our garage. There is also the possibility of working in a shed nearby which usually looks more like a warehouse and this is the place where one creates larger pieces. We also can have more sophisticated tools or machines there.

When we create drawings, the most usual way to us to create them it is working in our own home, or even in our own room. So, it is very common in this space to mix art and life. That is, pencils with clothes and papers. The atmosphere is very familiar and we feel very comfortable working. It is very easy to find solutions to a given problem by observing consciously and unconsciously pieces almost all the day (while we are sleeping, eating, resting, waiting something...). Therefore, a Eureka always comes. We feel so comfortable at home working in pyjamas, it becomes our uniform.

Perhaps an extreme example of this feeling of creative space's capsule, is the Hikikomori phenomenon that occurs in the rooms of young Japanese teenagers. Their foods, laptops and cut images that inspire them... everything everywhere. At the same time, they dress in pyjamas with teddy appearance, Kigurumis or better known in English as disguise pyjamas. Hooded overalls are shaped like animals and/or cartoon characters, manga, etc. Some of these young people also create and draw in their rooms. Japanese artist Yoshitomo Nara sometimes installs their collections of drawings, together with objects and small details, looking for very similar qualities to the rooms of these teenagers.

Another example of creative space in the room, is the artist Žiga Tomori who lives in Berlin. His studio is full of stimuli. On the [ignant.de](http://ignant.de) website, in Work in Progress section, there are more examples of studios. They are very special created spaces.

Talking about home, one thinks that the pieces one can create



at home should be more intimate, smaller scales or even autobiographical and daily. The Homemade drawings by the Spanish artist Fernando Renes are a good example of casual and ironic drawings made of watercolor, ink and pens.

Anecdotes in everyday household are a topic of inspiration to many drawing's artist. The French philosopher Gaston Bachelard in his book *The Poetics of Space*, published in 1957, highlights the sensitivity and symbolism that has his idea of home as a private space. A space of reverie, desires, fears, concerns, etc. Bachelard insists on underline the house as our corner in the world. A corner where there are many spaces like the attic, bed, hallways, etc. But where we also have lots of objects and collections, miniatures that lead us to other worlds. In the end, our homes are cabinets of curiosities or wonders 6 that define us.

Urban space and surroundings are not a sedentary space as home, but quite the opposite. These are spaces through where we wander. Sometimes we pass them by, and at other times, we stop to see certain details. So, our creative space is often dynamic, it is usually converted into a trip. Throughout history different trends of knowledge studied precisely the act of enjoying aesthetically the ride, the tour and travels.

In the 2nd half of the nineteenth century, after the workers' revolt of 1948, some political changes, economic and social conditions took place in the city of Paris. The opening of the urban design in great avenues versus the previous chaotic streets, resulted the flâneur birth. It is a philosophy that is based on multisensory enjoyment of city space.

Years later, on April 14, 1921, the first visit Dadá happens. Again, the city of Paris is the protagonist. There is the need to go outside. This Dadá behaviour arises as an artistic revulsive, and at

**F3.** The writer Freulein Anna and her roommate and illustrator Žiga Tomori in Berlin, August 2012. // Their home, their studio.

**6.** Mateo-Sagasta, A.: *El gabinete de las maravillas*.

the same time as an ideological attitude of rebellion against characteristic social indifference from interwar artists. This seduction by the banal and unnoticed in everyday reality, will be developed retrospectively by the Surrealists and Situationists.

The surreal walking took place in 1924, three years after the visit Dada. This attitude of travel and do erratic paths is still present in drawings made by contemporary artists like Franz Ackerman, Francis Alÿs and many others. Specifically, Ackerman has a series of drawings called mental maps that performs only when he is travelling, in visual diary form. In them, the author presents aerial maps or architectural details of the city. Urban landscapes are composed by lines of psychogeographical component.

There are other drifts as the Situationist of mid twentieth century, the New Babylon Constant, others related to the Land Art and different individually artists still are interested by this attitude of creation (Sophie Calle, G. Orozco, J. Macchi, etc).

This attitude to draw or create anywhere is natural and close. So, it is away from the inaccessibility or elitism that sometimes surrounds the art. For this reason, many teenagers and young artists express themselves and feel comfortable through drawing in their notebooks as a diary. This way their interest in art begin, and then they maybe will study Arts or not. In any case, notebooks to draw are very common between young people and fanzines too as a an underground alternative. One of these girls is Isobel Wood and she is studing Fine Arts. She lives in United Kingdom, is 19 years old and she also draws cats and occasionally is engaged to the fashion world. She usually records in his diary different snapshots of his life just in pencil.

**F4.** Isobel Wood drawing, September 2012.



## 2. 2 · Multisensory Experience - John Dewey

When we inhabit a place or scene, there are all kinds of relations with the context, which determine the creation consciously or unconsciously. But in any case, they help us to understand the complexity of our experience and life in general. For the same reason, the extraordinary from the ordinary reaches the viewer, lights and empathizes.

In this sense, there are different studies and authors about multisensory experience in artistic practice. Specifically, as I mentioned in the introduction of this text, the American philosopher John Dewey talks about it in his book Art as experience. Here he defends a sensitive attitude in order to use all our senses to achieve a total artistic practise. According to the author, this approach increases our capacity to act and understand what we are dealing with. Art as experience invades everyday life completely, it achieves a continuous exchange and fusion. This statement is very present in this research, and in particular in the development of a creation without artificial components and filters between the motif, the environment, the experience and plastics results. The lowest artificiality between life and art, although in the plastic point of view these creations can nearby to the concept of dream and fantasy surreal. It is also the appropriate time to mention the term coined by this author, that is Enhancing Life **8**. Dewey says that vital connection and intimacy between hand and eye in the natural context makes us more alive. He also uses the concept of taste **9**, art and life should be tasted and enjoyed. The Spanish artist Juan Luis Moraza invented a similar term. In this case, saboer **10**, that is, artistic knowledge + taste (saber artístico + sabor traslated into Spanish).

- 8.** Dewey, J.: El arte como experiencia, p. XVI  
**9.** Ib.: p. 55  
**10.** VVAA.: Notas para una investigación artística, pp. 56-62

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## THE CHALLENGE OF LOOK AND READ

Why Illustration communicates meaning that text is not as equipped to deliver



**Susan M. Hagan.1**

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### Abstract

Audiences have a limited capacity for holding linear text in active memory. When faced with radically new ideas, audiences may not be able to follow an author's intent. Text might invite us to imagine scene or character, but only to the point that we the readers are willing to imagine. The writer Upton Sinclair found out what happens when a textual invitation to see with the mind's eye, is refused or reinvented. When Sinclair wrote *The Jungle* (1906), he invited his readers to imagine immigrant workers and the conditions they endured in meat packing plants. In that novel, he hoped to convince his audience to act on the behalf of workers who, once imagined, could not be forgotten. The audience refused that invitation and instead imagined the meat on their own tables, which led to the Pure Food and Drug and Meat Inspection Act (1906). Sinclair later said, "I aimed at the public's heart and by accident hit its stomach."

An audience's self-interest might encourage them to dismiss or reenvision what the author finds important. That is true of metaphor as well as argument. A verbal metaphor, because it can be imagined differently by each reader, might not be strong enough to overcome established assumptions. However, actually seeing that metaphor creates a more concrete experience.

## Why Illustration Matters

Detailed analytic information is not at the top of our mental wish lists when we are confronted by new knowledge that challenges what we think we know, as both Petrie (1979) and Sticht (1979) have pointed out. These learning situations call for experience to help alter existing understanding (Petrie & Oshlag, 1993).

Textual metaphor can be problematic because the audience is being asked to create an experience that accurately reflects what the author thinks, but that audience still wants to hold on to the imagery of existing understanding. That is not to say that illustrations alone can carry the day. I argue that concrete visual concepts in collaboration with concrete verbal concepts could help an audience reconsider ideas that they already thought they knew in a way that will not let them easily slip back into the old points of view.

Here I present a case study not only designed to revisit old understanding, but more importantly to help build a direction for visual/verbal collaboration that would be useful in situations of this type. It has a rhetorical basis as these metaphors create arguments, and begins with a rhetorical commonplace (Aristotle, 1991; Consigny, 1974). That commonplace inspires small metaphorical stories which open exploration for the arrangement of the visual and verbal elements, leading to a three-part learning process (Petrie & Oshlag, 1993) that affects the development of the metaphor across pages. I worked within an arena of reflective practice to try out these ideas.

## The Exigence: They Think It's "X," but We Know It's "Y"

This project began when a colleague, David Kaufer, told me that he had a new hypothesis concerning textual voice. He claimed that textual voice emerges from underlying principles that could and should be taught. By making that claim, he put himself at odds with the conventional assumptions of the field. Most theorists seem to agree that we should not turn voice into a set of underlying principles. A long-standing tradition in American composition asks us to focus our attention on voice as the study of individuality and freedom (Harris, 1997). It would seem to be impossible to find underlying shared principles that build a textual

quality which is prized for its supposed lack of common ground, but that is the perspective he put forward. He believes we have not yet identified those principles because voice is defined by a metaphor with widely varying and uncertain boundaries. Those flexible boundaries leave us looking at voice from an array of perspectives including: voice is the unique sounds of a particular author; voice is a quality of language play that brings to mind "what is oft said, but ne'er quite so well;" voice is the echo of speech; and voice is the product of genius. Interestingly, those flexible definitions emerge from a text-only metaphor, which, as I discussed in the last chapter, might encourage these unpredictable outcomes.

Individuality and freedom are not the only general definitions for this metaphor. On the other side of the spectrum, voice becomes a set of norms within a discourse community (Harris, 1997). He looked at both sides of the spectrum in order to consider an important debate between Peter Elbow and David Bartholomae (Harris, 1997), two theorists who have been working on the best way to define and teach this textual quality. For Elbow, voiced writing emerges from everyday language concerning matters which are first and foremost close to the writer's own heart and unconcerned with prescribed conventions. From this perspective, voice never fits comfortably within the conventions of tradition.

Bartholomae, on the other hand, rejects the idea of an inner voice free of history, language, and culture. He believes our primary concern should be teaching the conventions of a field before we begin thinking about how to resist those conventions. For Bartholomae, voice provides a bridge for students to join traditional communities, not be isolated from them.

Joseph Harris (1997), who crystallizes the debate, has doubts about a resolution:

*The contrasting views of what ought to go on in a writing classroom stem from deep and conflicting intuitions about how language and the self are related. I don't think there is a way of disproving one or the other, any more than there is a way of proving or disproving the existence of God. But I don't think they can be easily reconciled either, for much the same reason. The differences go too far down. They involve founding insights, beliefs, axioms, precisely what neither side wants or is able to question. (p. 42)*



While Kaufer believes the Bartholomae/Elbow debate can be resolved, he does not believe that debate gets to the basic problem. If we define voice as an individual concern, we still don't know what the author had to do to make his or her unique presence credible. Similarly, if we consider voice in terms of our relationship to cultural or professional identities, we will still be clueless as to how the author made that common identity uniquely his or hers. From either of those perspectives, the writer's task remains a mystery.

To resolve the debate between individual voice versus cultural voice, and more importantly, to address the mystery of voice, Kaufer posits that a credible and unique presence emerges only when it is based on an overall design with elements we can identify. Within this larger design, writers build a world that feels voiced no matter how unusual or how common some of the details might seem.

This case study attempts to present Kaufer's design perspective using visual and textual information that, I argue, might lessen an audience's need to either reject the dissonant idea or repaint Kaufer's stance in a way that would better fit within the more comfortable existing idea. As part of a larger framework, problems of this type seem to begin with the exigence "they think it's 'X,' but we know it's 'Y.'" Here, "X" is the established idea. "Y" is the new and dissonant idea. The author attempts to convince the audience that "Y" is preferable to "X." In order to accomplish this goal, the author must convince the audience to stop cognitive action in order to consider and adopt the dissonant idea (Mills & Harmon-Jones, 1999). The rest of this cross-modal framework will be geared toward that goal.

### **The Commonplace: Redefinition**

While Kaufer has pointed out that the existing metaphor for voice is problematic, I wish to point out that it is not the use of a metaphorical concept that creates the problem, it is the use of a verbal metaphor that is far too slippery. A verbal metaphor is scenic writing, and scenic writing must be imagined. Imagination does not become problematic until a particular scene is crucial to understanding. When that scene is crucial, a verbal metaphor based on slippery words and built by unpredictable collaborators has not

optimized its ability to communicate a shared message. When an unfamiliar scene is crucial to understanding, audience imagination in a verbal metaphor does not help develop a dissonant idea. In fact, imagination gives an audience the wiggle room they need to repaint the metaphor to suit their personal interests and beliefs.

My job then was to identify methods of creating a visual/verbal metaphor that better mirrored the author's intent. The words and the illustration would both be crucial to understanding. Adapting Aristotle's commonplaces was an effective way to think about Kaufer's project, and I argue is a useful method of invention for other situations where words and illustrations interact.

For Kaufer, voice begins when students learn how to re-envision the human presence we so easily communicate in life. In order to communicate life onto the page, we must explicitly or implicitly learn how to develop individual identities within cultural identities. Discovering how to accomplish this task is difficult because the virtual world of the text always has missing pieces. We must discover which central pieces communicate living, breathing organisms, even as many other pieces are left to the imagination. Whether characters are from Earth or the planet Tralfamidor (Vonnegut, 1969), readers must be able to see those characters as predictable members of a group. For most writers, the word predictable does not seem to occupy the same space as the word voice. The juxtaposition of the two seemingly unrelated elements is a dissonant idea for many of the individuals Kaufer wishes to address.

Additional dissonance may also arise because Kaufer includes "place" and "over-time action" as design elements necessary to the creation of voice. These dissonant ideas also must be addressed because Kaufer seems to have confused scene and plot with the concept of voice on the page. He argues that we fail to understand voice in part because we fail to see all the elements that contribute to its making. According to Kaufer, isolating place and action from voice may be useful in certain situations, but when writers need an environment that helps them consider any complex writing problem, the parts cannot be considered separately while voice covers the whole thing like icing on a cake. From Kaufer's perspective, elements not usually thought of as

voiced actually help textual voice emerge with authority. The fact that plot and scene have for so long been considered separate and apart from voice, and that Kaufer now seeks to synthesize those parts, again increases the dissonance and the need for concrete learning.

Creative arenas are messy places, made messier, in this case, by the dissonance between the known and the new. In developing this study, I found that commonplaces gives this rhetorical problem a structure and focus that can help move from exigence to invention, and on to arrangement. I began considering Aristotle's common topics, which include:

- definition (genus and species),
- division (whole and parts, subjects and adjuncts)
- comparison (similarity and difference, degree),
- relationship (cause and effect, antecedent and consequence, contraries, contradictions)
- circumstances (possible and impossible, past fact and future fact)
- testimony (authorities, witnesses, maxims or proverbs, rumors, oaths, documents, law, precedent, the supernatural),
- notation and conjugates (Aristotle, 1991).

The Aristotelian commonplace most relevant in this situation was definition. But that commonplace was not quite on target. This problem did not deal with the standard idea of definition, in which all experts build on a common understanding. Instead, it dealt with redefinition, in which one expert tries to change established thinking. A re-definitional commonplace made this creative arena more useful for reasons that become more apparent as subsequent parts of the framework develop. I found rhetorical tools, such as the commonplace, can be adapted to fit the needs of new concerns. They need not be formulaic in the way Kinross (1986) warns against. The discipline of communication design has at its disposal rhetorical tools that do not have to provide the designer with an agenda that determines the creative outcome (Bitzer, 1968). Instead, our use of commonplaces and other rhetorical tools can echo the approach Scott Consigny identifies in his analysis of the commonplace. For Consigny (1974), the common-

place does constrain the creative arena, but not in a determinant sense because the commonplace also provides a source of creative options. Consigny notes that unlimited options shut down creativity. The same thing happens when no options exist. Within a re-definitional commonplace, solutions might be more effectively and imaginatively considered. However, this is only the first step in developing a creative arena that can move this type of problem from invention to arrangement.

### **The Small Metaphorical Story: A Tale of Redefinition**

Ironically, thinking about imagery benefits from Mark Turner's (1996) book, *The Literary Mind*. Turner states that the general story of human thought lies in our ability to "construct small spatial stories and project them parabolically (p. 15). For example, the small story, "when the cat's away, the mice will play" can be projected onto an unfaithful lover even though he or she is not actually furry or gray (p. 9).

The physical aspect inherent in these small stories can be especially helpful when trying to decide what should be said visually and what should be said verbally. Turner notes, as do Lakoff and Johnson, that we project our sensory and motor experience onto ideas that have no obvious physical aspect. For example, both "an idea seized me" (Turner, 1996, p. 37) or "argument is war" (Lakoff & Johnson, 1980, p. 4) communicate an abstract idea by way of a concrete analogy. A small story or metaphor, based in redefinition, allows the designer to more easily consider will be communicated visually and what will be communicated verbally concerning the story of voice.

The story used to show that a predictable voice is necessary to the creation of an individual voice, was: "textual voice has identifiable sources that combine to produce unique sounds." Sources that produce sounds evoke imagery that describes the gestalt that is fundamentally important to his framework. Details concerning textual voice within that gestalt can be fleshed out verbally. These visual and verbal elements collaborate in a codependent way so that both are necessary for a full understanding of the concept. The story of source and sound is, of course, not meant to be an end product. Instead, that story is created in order to consider the broad strokes of arrangement within this re-definitional common-

place. Again, if a verbal metaphor was the end product, slippery words would still depend on an unreliable audience.

A re-definitional commonplace works most effectively when the small story provides elements that can be transformed into a core scenic aspect (sources from which sounds emerge) as well as descriptive (textual voice). In this case, the scenic and descriptive elements allowed the concrete and the abstract – even the most unique voices have sources that can be identified and for that reason unique voices still feel common to human experience.

### A Three-part Process: the Paradox

The cover begins, but can only begin to introduce the new concept because it is a three part process, which Petrie lays out as the introduction of a paradox, the presentation of the metaphor, and activity and correction. The paradox (or anomaly, as Petrie called it) shown on this cover introduces the first stage of learning (Petrie, 1979; Petrie and Oshlag, 1993). The typical gestalt view of voice, “voice is experimental language play,” is illustrated on the left-hand side of the cover. That side has a different visual quality than the right-hand side which echoes “being heard.” This black and white separation is not a line of demarcation. Instead, it represents ying and yang. One thing flows into the other because the words “writing a voice” emerge from a rubbing of metal letters we see on the right side of the layout. The free scribbling that might otherwise not have a connection to carefully placed form now is seen to rely on that relationship. The principle of simplicity (Arnheim, 1974) encourages the idea that the letterforms, the hard metal type to the right of the rubbing, have a counterpart behind the rubbing that makes the rubbing visible. Simplicity in this case emerges by way of groupings created through similar alignment (they sit on the same baseline) and shape (they are the same type-face). Those unifiers create a connection between the two sides. This first step, presentation of the paradox, begins to communicate “unique predictability” by putting rubbing and hard type together. That message still lies under the reader’s radar. The paradox will be explored further on the title page.

Writing a Voice that can be Heard: uncovering the writer’s design, does not imply re-definition. The words alone communicate little more than a hopeful outlook concerning the writer’s



future abilities. If the spatial story, “the identifiable sources that combine to produce unique sounds,” was explicitly stated rather than shown on the cover, the audience’s could visualize it in many different ways. For example, identifiable sources that produce unique sounds could relate to individual authors who act as an inspiration for novice writers. Any writer who interpreted the title in that way would have to not only accommodate the new metaphor later in the text, but would also have to put aside the selfmade, and established, interpretation. For that reason, text alone could increase cognitive dissonance. Meaning collaboration helps to prevent these misleading interpretations. It was specifically important to overlap the sub-head text on the shadow of the visualized metal type “that can be heard.” As Arnheim (1974) points out, overlaps intensify content relationships.

No matter how effectively the visual/verbal collaboration on the cover is designed, it will probably be most useful to the audience in retrospect. Given genre expectations, the reader will probably conclude the cover was developed simply to attract the notice of the audience. All books covers hope to attract attention, to stand out from the competition. This is a kind of “pop-out” (Treisman, 1992). Pop-out, as described by Anne Treisman, refers to the obvious boundaries we notice between objects before we assign meaning. This cover is meant to benefit from pop-out even as it tries to accomplish the larger goal of redefinition. However, if pop-out must always be the cover’s first goal, what additional value added does visual/verbal collaboration bring to the cover?

As stated earlier, a useful cover will act to discourage misleading interpretations of the redefined concepts. Additionally, the cover might later act as an important transformational illustration (Levin et al., 1987) whenever the reader recalls the writer’s purpose. Levin et al. (1987) points out those image cues improve learning. I argue that Levin et al.’s insight, which deals with transformational cues as reminders of names or terms of art, might be more valuable when adapted to the idea of conceptual gestalts.

The cover also brings value-added in its use of comparison and contrast. The voice that can be seen (heard) on the cover stands in contrast to the voice that can’t quite be made out (heard) on the title page. The cover and title page work together to provide a better sense of the paradox – even if the audience is not yet com-

pletely clear about its significance. When more descriptive text is available, that paradox will become more evident. They will get those details and have the visual/verbal metaphor in place to fit them into the gestalt concept.

I wish to point out again that the visual element in this collaborative environment is not a supplement to the text. While textual enhancement seems to use visual cues redundantly (Levin et al., 1987; Mayer, 2002; Petrie, 1979; Petrie & Oshlag, 1993; Plass et al., 1998), visual/verbal meaning collaboration does not consider either modality to be redundant.

Instead, the visual element constrains and redirects the meaning of the text. A redundant element could not alter the textual information. Similarly, the text constrains our interpretation of the visual information (Barthes, 1977; Yabus, 1967) in a way that the word “STOP” on the stop sign does not. These nonredundant elements set the stage for a metaphor better-suited to the three part learning process Petrie advocates.

Further, it seems important to consider Arnheim’s (1974) concern with relative simplicity. In championing relative simplicity, Arnheim (1974) does not wish to do away with complexity. He compares the relative simplicity that results in parsimony and orderliness to the scientist’s principle of parsimony, stating, “when several hypotheses fit the facts, the simplest one should be accepted” (p. 59). A hypothesis can be rich in content, but it should not be overly complicated. Relative simplicity was explicitly considered in the combination of handset type with the simple illustrative charcoal rubbings of that type. Metal type with serifs that produced good clean edges in the rubbings was used to communicate the visual aspect of the metaphor. The metal type has the special purpose of communicating the idea of source. The rubbing communicates the idea of sound. Again, that communicative result is only possible because imagery collaborates with text. The collaboration must be as specific as possible. For example, if the audience saw only metal type with words that only said, “Writing a Voice that can be Heard” that title could be interpreted as indicating an historical account about the emergence of the author in the age of print. But the subtitle and the rubbing, reinforces the idea of the writer’s process rather than the historian’s interpretation. This example, one still in progress, might need even more

revisions to make sure it accomplishes its goal. That goal is one in which the text accurately describes and narrows the imagery’s shades of meaning while the imagery scenically presents an idea that can influence the meaning of the text.

## Continuing the Paradox

In “Metaphor and Learning,” Petrie (1979) argues that frameworks of understanding are altered by metaphors that reflect a three-part learning process. The acquisition of the radically new moves from the introduction of an anomaly to the presentation of the metaphor, to activity and correction. Green (1979) agrees with some of Petrie’s thinking but calls the anomaly a paradox, two things that seem to be contradictory, but which are in reality both true. For Petrie and Oshlag (1993), visual information could be useful, but only “to supplement in a perceptual way the new conceptualization suggested by the metaphor” (p. 593). I have argued that illustration should be included as a central part of the metaphor’s construction because each of the collaborative modalities offers a communicative strength not present in the other. When communicating the radically new, we must increase the weight of the new idea as much as possible. If we do not accomplish that goal, cognitive dissonance will encourage the retention of the established idea (Mills & Harmon-Jones, 1999).

The visual/verbal paradox began with the cover, but must be completed on the next two-page spread.

On the next page, you can see that the paradox, begun on the cover, is expanded. The cover illustrated a voice that could be heard. The source could be taken for granted. This spread, on the other hand, shows a voice that isn’t quite heard because the source has been ignored. On the left side of this title spread, the text states, “this is not quite a voice.” The word “voice” has almost disappeared. If the audience hadn’t seen that word before, they might not know it was voice at all. The new rubbing on this page, coupled with the cover, introduces the paradox of unique predictability by showing what happens when predictability is violated. On the cover, an interesting looking rubbing can be read. On the title page, it cannot. That rubbing now fails to bring out the word voice so that it can be heard. I added the text, “not quite a...” to direct the focus of the audience. Without the words,

“this is not quite a ...” the interpretation of that sketch is up for grabs. The audience could easily think the designer had no purpose in mind except to present a contrasting variation that increased pop-out.



This title page does violate genre expectations in a way some might find objectionable. After all, the paradox does not clear up the mystery concerning this new perspective on voice. However,

this visual/verbal paradox of unique predictability and the problems that arise when predictability is violated, is a key element in all the lessons concerning voice. If our audience cannot experience this paradox as a visual gestalt, it might be more difficult to overcome established thinking when viewing those more detailed lessons.

### Tightening Relationships

In order to encourage looking with reading as a collaborative experience, the design incorporates cohesive as well as structural ties (Hagan, 2007). On the title page, the demonstrative pronoun “this” used in, “this is not quite a...” cohesively ties to the rubbing. The phrase refers ahead to the visual information – the rubbing of voice. In texts, cohesion holds what might otherwise be a set of unrelated sentences together (Halliday & Hasan, 1976). When illustration and text collaborate, cohesion holds their meaningful aspects together. In this case, the demonstrative pronoun helps to hold text and visual information together.



This next two-page spread presents the metaphor, textual voice is identifiable sources that combine to produce unique sounds, by not only displaying identifiable sources (metal type) that seem to be in the process of physically combining (while the rubbings show what emerges from those sources), but also by introducing descriptive text that brings analysis to the gestalt presentation. While visual/verbal collaboration presents the metaphor concretely in order to redirect meaning to fit the author’s intention in a gestalt sense, detailed text works within the collaboration to describe why this redirection matters. The imagery makes it more difficult to redraw the metaphor in a way that the author’s would not have intended. The text is not background content. Without the text, the visual aspect of the metaphor has too many possible interpretations. In this case, the text captured by the rubbing visually shows and verbally directs the eye to notice that sources underlie, but do not stifle, the writer’s voice.

Holding the collaboration together, so that the audience is encouraged to look and read, is not a matter of simply placing these elements in close proximity. Just as cohesive ties unite two types of meaning, structural ties, adapted from Arnheim’s work (1974) unite them perceptually. In this case, unifiers that hold source and sound together come about by way of similar alignment and shape. The baseline of the rubbing of the type on the left-hand side aligns with the baseline of the metal type on the right-hand side. The outline of the type rubbing matches the outline of the metal type. The similarities encourage the idea of a relationship between rubbing and type because we interpret structures and patterns in the simplest way possible (Arnheim, 1974).

However, just as text alone must contain cohesive relationships so that a whole text is possible (Halliday & Hasan, 1976), detailed text that helps to explain the visual/verbal metaphor must tie to that big picture – or the collaborative message will not be fully integrated. In this case, the authors' encourage this integration in two ways. A demonstrative pronoun again refers out from the text to the imagery. The use of that cohesive device can be found in the text, "the lines drawn on these pages." The audience is also explicitly invited to look out with the words, "[a]s you look at." Cohesion used in this way encourages the author's intention over principle of simplicity because simplicity would encourage the audience to stay in the line of the text. Additionally, a visual cue – the graying of the text seen again to the left – provides a visual mapping for the audience to get back to the original point of departure, making it simpler to leave the text in the first place.

Of course, creating cohesive and structural ties is useful not only because it improves visual/verbal collaboration, but more importantly because it might aid in the acquisition of radically new knowledge. Petrie and Oshlag (1993) state this acquisition needs to make use of experience to help the learner adjust his or her understanding. That understanding starts out as a non-linguistic gestalt. They stress text is the primary vehicle for that non-linguist understanding. I posit that non-linguistic understanding would benefit from a non-linguistic element that is part of the experience of learning.

### Activity and Correction

After presenting the paradox on the cover and title page spread, and explaining the metaphor on the first page spread, activity and correction continue with the table of contents. The authors have presented the paradox and the metaphor in order to redirect the meaning of voice. They have stated the reasons why that redirection is important. They have stressed that their focus will be on source rather than sound. The table of contents presents the sources themselves.

In order for this particular example of meaning collaboration to be shown as successful, subsequent user testing must find that this work helps its intended audience consider the merit of the

dissonant idea, without repainting the new metaphor in a way that makes it fit better with established thinking. Finally, that audience should give the dissonant idea more weight than the established idea after the testing is complete. This example of meaning collaboration should be more persuasive than text alone.

### Summary

Meaning collaboration is not visual literacy, because illustrations offer meaning elements that text is not capable of producing. I believe we must always account for the presence and influence of the text, no matter how little text may be present. We cannot write any text off as anecdotal. Similarly, we must always account for the message contribution made by the illustration when it is in the presence of the text. Because of their particular strengths and weaknesses, imagery collaborating with words should be able to produce a kind of clarity words alone or imagery alone could not communicate

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# THE AUTHOR AND THE SELF-PORTRAIT IN ILLUSTRATION



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## Abstract

Authorship as the identity in the illustration approximates increasingly to the independent artwork. The author uses to seek a personal expression, through a general coherence, sometimes featuring the repeating of some elements in its illustrations, passing through the frontiers of Arts and Design, turning increasingly to a conceptual illustration and getting a greater freedom of expression. The role of each author and illustrator is defended, and the self-portrait frequently represented, making it a thematic statement.

From a sample of national and international contemporary illustrators, aims to raise awareness of the characteristics of each of the illustration and how to portray, identify and assert themselves aesthetics, characteristics and identities in the field of visual language and universal, what is illustrated.

## Keywords

illustration,  
self-portrait, author.

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## 1 · Introduction

It is and has always been inherent in every human being's will, the need to know or (recognize), understanding its constant becoming, analyze and take up reflection of his whole being.

The role of the artist or author as a way of revealing his own identity through his work, from his hand, and his recognizable technique, becomes a landmark in understanding and identification in all Art History. As if he wanted to immortalize himself, the work is ephemeral, but persists in times and history. This also wants to preserve a moment and time, so as an addition to their work, to be represented and to be remembered - To see and to be seen.

The author and artist wants to, somehow connect to the divine, leaving his mark, his representation, and his look at the world, inserting themselves in their own work so the self-portrait can become the work itself, the object itself, the presence and existence beyond the human essence.

The decision to self-retract is an act that demarcates the time and place of its execution. Make a self-portrait is confined in a catchment area of support at the time.

The issue arises when the authors self-portrayed as continually noted, so he may identify himself and immortalize a moment in his life. The author and artist, by representing himself portrayed reveals itself as a multiple being, his own style, always available, always changing, as a reflection of his own outside world.

He creates masks, showing himself as reflecting one who wants to pass up the exterior, to reveal, to affirm and to denounce what others cannot evaluate.

Here he becomes the analyzer, deeply seeing in a personal confrontation and in a searching to understand and take knowledge of himself. It is the creation and the creator, who knows he has the control and the power when looking in the mirror and retracts.

"The art is presented as a triple divinity face, where he successively reflect external reality, creating plastic and inner reality" Huyghe.

The artist dips himself travel up and returns to his representation. The justification for the act of self-retract will not always be a catharsis? But truth is, when the artist is portrayed, it is more than in other works done indeed he himself becomes the work, the sub-

ject of contemplation outside himself, as if in answering himself.

"(...) experience that only he [the artist] lived in secret, and her own portrait carries between the thickness of the paint (...) the picture becomes what the artist could not see in the mirror i.e., the desired mirror is now the frame itself." Medeiros, 2000: 126.



F1. RIPA, 1987: 240.

## 2 · The self-portrait in History of Art

"Drawing A young with a noble look, beautiful and richly dressed... He holds a compass in the right hand and a mirror in the left. The drawing is provided with the property of giving us the knowledge of everything visible, being able to reduce to its true size and dimensions. He shows himself young and with a noble face, as the nerve of everything delightful and achievable according to the beauty. (...)

He shows himself dressed, because only a few could see him naked, so as only a few ones entirely know his rules and reasons. (...)

With the compass, it shows how the drawing consists mainly in calculating the dimensions, which are only perfect when they maintain the right proportion to each other(...).

The mirror means that the picture belongs to the inner mood that we call fantasy, which becomes the place where all the images establish themselves; as in the imagination everything's shapes keep themselves, which, according to perception, are described as beautiful or lacking of beauty."1.

The doing of self-portrait is definitely a remarkable fact in the history of finearts. Such way of expression reveals itself as a self-reflex, quite often as an autobiographical register, in which the artist finds himself and gives a way to a wide range of interpretation to an external viewer. There are some examples of this fact, such as Van Gogh, Courbet, Warhol and Velasquez (Attachments, page 18, no images 1, 2, 3, 4, 31, 35, 43, respectively). These images don't follow any kind of style or chronological order. The intention was to show the entire history of art, especially the painting (excluding Yves Tanguy, Helena Almeida and Jorge Molder, who did self-portraits through photography), self-portraits of the great Masters, which in some way, intended to be positioned in their own work.

It is widely known that since the fifteenth century, through numerous portrait orders, by the great bourgeois and also with the

1. RIPA, 1987: 240.

discovery of heliocentrism, the artist wants to set himself as the center, within their own works, assuming and revealing his own identity.

Perhaps the concept of identity (creative individuality) has been valued and honored since the Renaissance. The artist is no longer a mere artisan or orders maker, to assume himself with a signature, *modus operandi* and technique in his work in arts, marking the authorship and creating his own identity.

In many cases the author is up to paint, other times it is represented within the work as if it were part, and other times it is as if he were the represented and the observer. In most cases it is represented by its own technical, language and identity, as if it were part of the work. What creates and the creation.

All are views for analyzing the role of the artist as its own representation.

A self-portrait within a portrait within a work that sees itself.

**F2.** Right to left, and top to bottom:  
Giovanni Bocca; Bosh;  
Pieter Brueghel;  
Sandro Botticelli; Piero della Francesca;  
Leonardo da Vinci; Rafael;  
Durer; Velasquez.



**F2(cont.).** Right to left, and top to bottom:  
Kazimir Malevich;  
Rembrandt; Tintoretto;  
Gustave Courbet; Paul Cézanne;  
Vincent Van Gogh; Eugene Delacroix;  
Edvard Munch; Edvard Munch;  
Édouard Manet;  
Piet Mondrian; Paul Gauguin;  
Edgar Degas; John Constable;  
Egon Schiele



**F2 (cont.).** Right to left,  
and top to bottom:  
Magritte; Paul Klee;  
Yves Tanguy;  
Beckmann; Pablo  
Picasso; Frida Kahlo;  
Francis Bacon;  
Helena Almeida; Andy  
Warhol; Jean-Michel  
Basquiat; Jorge Molder;  
Lucian-Freud; Cindy  
Sherman

### 3 · The self-portrait in Illustration

The author states they have “two ways to overcome the figuration (...) while the illustrative and narrative) or towards the abstract or towards the Figure,” Deleuze.

The self-portrait in the illustration has been expressly held in multiple techniques and approaches.

For this, the question arises on what exactly illustrate. The self-portrait in the illustration goes far beyond the simple representation in drawing, painting or sculpture. The illustration goes beyond the borders of the characterization, identification and representation of the author as self-portrayed.

Apart from how the illustration imminent features support bidimensional are the features and elements of the author, who become more evident than in most prior art mentioned.

Never the palette, the characterization of the trace identifier, the plot, the registration and language, has been as individual as in the illustration.

With social networks and implicit willingness to share a social, intellectual, artistic or simply alternative, way of living, made everyone one, somehow to create a selfportrait, an Avatar, and it shows in news mediums as photography, draw or illustration.

A contemporary illustration and its illustrators tend to naturally follow every trend and take up for their representations. Never self-portrait was so clear, so present, so multiplied in our surveys over the Internet.

This search is a random selection of self-portraits in illustration (see pictures attached, pages 5-8), from a certain point became alternating and varied, for better shows gender and essential features that return in the work each of the illustrators and somehow, had their peak when they performed their self-portraits.

Therefore and apparently, the illustrator meets all the techniques and used it on illustration, combining his characteristics copyright to finish a self-representation that goes beyond a representation of themselves and that covers a wide representation of a way of being be knowing and doing.

The picture stops wanting to resemble reality and is just next to the main features and deviates increasingly from conventional features of caricature. Besides being ever present in contemporary illustration, the exaggeration, the emphasis, the visual metaphors,

analogies and personifications (many or most of the time shares represented jointly between the author and an animal), any representation escapes caricature. The illustrator wants to highlight and amplify the characteristics of his own, are features, details on his face, or notes of personality, often combining a criticism or humor, but never using self-caricaturing himself. The illustration has the role of visual communication, a set of symbols and interpretations that converge and return the illustrator, a parallel between what he wants to communicate and that is as an individual and be looking for answers to their existence.

**F3.** Right to left, and top to bottom:  
Julio Dolbeth; Julio Dolbeth; Julio Dolbeth;  
Maria Helena; Maria Herreros; Ed Ceisel;  
J.Victor; Yara Kono;  
Marc Johns



**F3(cont).** Right to left, and top to bottom:  
Reyhan; Sara Pazos;  
Lara Luís; Frenemy;  
Gemma Correll; Glen O'Neill; Inês Coias;  
João Fazenda; Bex Bourne; Rosa Feijão;  
Rui Sousa; Silje Fadnes;  
Rui Vitorino Santos;  
Rui Vitorino Santos;  
Rui Vitorino Santos

#### 4 · Self-Portrait from the author

constancaaa.tumblr.com

The following examples are a small sample of self-portraits that I have been developing and exploring. In an attempt to really understand what is portrayed as a portrait of me, I try to identify myself with the final illustration. To do so, how should I identify myself with a self-portrait without a face?!

The personifications are used not be as a totem, but as an approximation to my powers, weaknesses and tendencies, using and exploring my language and improving my technique in illustration and as an artist.

F4. Self-portrait from author. Right to left, and top to bottom: 2011; 2011; 2012...



#### 5. Conclusion

On a personal discontent or a constant search for knowledge and selfknowledge, human beings seek to recover in a mirror, a projection or in a reflection to look up to who can identify themselves.

This identification often liable to rub lies and illusion branching out and through various forms of expression.

Today, the active role of the individual in society, is seen as being unique, they should express themselves individually and stated many times or by different approaches to outside influences.

We saw that these forms of expression as an individual were constant in History and Art History, was by drawing or by painting, but here the question arises why the representation in a thematic illustration of how the self-portrait? Which leads to the artist and illustrator wanting to meet as an illustration of himself, beyond a simple representation?

A practical illustration as well as illustrative work or series of works where copyright as a tool of the artist to practice reflection, criticism, analysis and response to immense emotional states, physical and intellectual.

And after all what is the illustration? Will is closely related with respect only illustrative of an idea, concept, text, or something abstract?

The need of every person these days has to proclaim and prove to the media and social networks, or with the growth and facility of access to photography, the expression of oneself through filters and naïve techniques, the image capture generates is also the need to show, to reveal, to declare that his own mirror is revealed to the world, the face, the expression, by way of being. And when the photographic representation is made the leap to represent a drawing or illustration many other issues and needs arise.

For it is not confined to a faithful representation of a face, but in what ever comes to personality and emotional state of the person concerned. Illustration and illustrator assume this responsibility, beyond it, when exaggerates, when the representation becomes a dimension that goes beyond the fact that grazes the dream and illusion and utopia and thus creates a series of visual metaphors, conditioned by freedom of each individual, technical, artistic and expressive.

The illustration and how it is presented in a self-portrait suggests an approach more real than mere representation, beyond any boundary of mere reality.

The conclusions and deductions are several. As an artist and

2. Professor Vasco Branco (2001): “(...) Who draws, draws to himself: he does not have to draw anything itself, (...)” (p. 123) in the drawing as universal tool. The contribution of the design process in design methodology. Paula Tavares International Congress of Arts, Communication and New Technologies, on 12 October 2009 in Aveiro.

illustrator, I tried through my illustrations shown here of my self-portrait, of me analyze, what I can carry to the representation and if that same representation is true to my goals, I want to show and show me. It also analyzes a *Nosce te ipsum*, which will monitor and evolve. And that will always follow the reflection in the result. Because “who draws, draws himself.”<sup>2</sup>

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# THE OBJECT BOOK DESIGNED FOR CHILDREN



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## Abstract

This paper aims to study the book for children, its narrative potential as a physical object and the role of Illustration as a material part of this object. The narratives of the book are born from all its elements: its shape, materials, colors, text and illustration. Together they aim to stimulate the sensorial perception and creativity of children, allowing other ways of reading, playing with it and building new stories. The examples presented in this study are works of authors that questioned the physical book and its narrative possibilities. Their work can be a starting point for new ways of thinking the book object and question other objects that may communicate as a book. In this process, Illustration, as a key-element of the children's book, can be projected not only visually but also to be experienced with the other senses, enriched by this experience and not limited by it.

## Keywords

book, object, narrative, illustration, creativity.

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## 1 · The book object

What is a book? A volume, an object with a specific structure, a content? What are the characteristics that distinguish it from other objects? What are its possibilities, as a narrative, communicative, educational and playful object?

The various experiences of the artist and designer Bruno Munari influenced today how the book is seen as an object, going to the basis of its structure and giving equalability to communicate to all its elements. It is not only the text and image the ones who can pass a message, communicate something to the senses and imagination. Also the paper and other material and techniques possible to include in a book, printing ink, different bindings, formats, sizes, all the variety of elements in a book can enhance the perceptual and narrative experience of it. In his *Unreadable Book* (fig.1), text and image are excluded, giving way to the physical elements of the book to communicate with the reader through the different senses.

As he writes about them, “ The goal of this experience is to see if it’s possible to use the materials that make up a book (excluding the text) as a visual language. The problem is this: can you communicate visually and tactily only by means of editorial production of a book? Or can the book as object communicate something independently of the printed words? What? ” (Munari, 1981, p.221)

With his ‘Unreadable books’, Bruno Munari dismantled the pieces that make up the structure of a book, going to the materiality of each of its elements and exploring their visual, tactile,

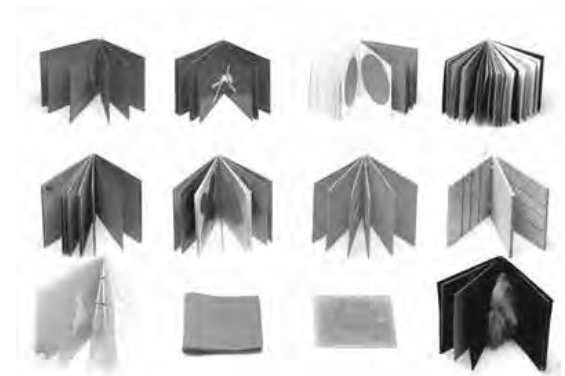
**F1.** Bruno Munari, *Unreadable Book*. Produced by Steendrukkerij de Jong & Co., Amsterdam



narrative and creative possibilities. The scarce experimentation of different materials and physical possibilities of the paper led him to create a book where the paper was the main communicative element. Seen not as a support for a text or an image but as independent and creative elements, the sheets are divided into different formats, sizes, proportions, textures, transparencies and colors.

The free combination, resulting from the action of whoever handles the book creates different rhythms, tactile, visual, and sound sensations and makes the book itself become a content, a set of sensorial messages. These make of the book an object that permits creativity and different narratives.

**F2.** Bruno Munari, *Pre-books*. Produced by Danese, Milan. 1980



Bruno Munari explores its cognitive and creative potential as an object in another experience: *The Pre-books*. (fig.2) By designing for children in their early development, Munari developed the concept of ‘Pre-Book’. Oriented to the sensor motor period, the author elaborates a set of twelve small books for children who have not yet begun to read and write, with the aim of encouraging a taste for the book and to stimulate sensory receptors.

These books are in first place objects to be handled, played, and explored freely. They consist of different materials: fabric, wood, paper, leather, etc. With different colors and combinations, different textures, smells and sounds.

According to Munari in his book *Fantasia*, “The extension of knowledge and retention of data should be made in childhood

1 Munari, 1981, p.37

through play<sup>1</sup>”, in our view, by manipulating. To promote creativity in creation is nothing is more than, according to the author, “(...) allow [the child] to establish as much relationships as possible, making her able to solve her problems, whenever they come up <sup>2</sup>.” By this mean, to assimilate the mutation of things through playing allows children to have a more plural and flexible thinking.

2 Munari, 1981, p.32

Instead of a repetitive behavior, the child will be a creative individual. It is during their early years that children develop intensively new neuronal connections. Stimulation at these ages will determine the ability of adaptation and innovation in adulthood. It is through play, imagination, fantasy, that children learn to deal with the environment and with themselves. It allows them to have an experience in perspective and test its possibilities, the so-called make-believe.

The book should accompany their experiments early on, allowing first the sensory exploration and their abilities, for later to support the construction of narratives.

## 2 · Narrative possibilities of the object book

Today there are several approaches that seek to respond to the problems of the limits of the book. They question its form and materials, and how they can adapt to the contents they want to convey. The physical possibilities and re-adaptation of the book don't cease to grow and to evolve. In this context emerge creative works of authors who associate the content of the book with the materials that complement is physically.

A book about nocturnal animals is printed with glow-in-the-dark ink and its content revealed only at night<sup>3</sup>, an egg painted with thermochromic ink shows the baby bird only when touched<sup>4</sup>, a book in the shape of a carousel is associated with the idea of a daily travel<sup>5</sup>, or a recipe's book can be baked for the right timing until the heat reveals its content<sup>6</sup>. These are very few examples of the existing books where shape, material and content form an indivisible whole and where manipulation and interaction is needed in order to read its content. It is no longer the eyes that read a book, but also the smell, the touch, and even the whole body. In these books, surprise is the key-element, which leads the reader to be a spectator of novelty through active manipulation of the object. The reader appropriates the experience.

3. Spot nocturnal animals, Sawa Tanaka.

4. Egg Book, Sawa Tanaka.

5. Journey, Sarah King

6. Well done, Brucketa &amp; Zinik

Together with the materiality of the book are questions about the material possibilities of one of its elements: Illustration. More than basis to communicate a message, an idea, a story, etc., text and image are gaining increasing importance as sensory elements. Particularly in children's albums, illustration more and more occupies the position of main element, from mere representation of a text to a living, creative and intimate element in the structure of a book. Sometimes without the presence of a text, the images communicate directly with the materiality of the book object. Yet, despite being a physical part of the book connected with its shape, texture, size, etc. Illustration is still accepted primarily as a visual element.

In this study we do not look back on the discussions about the typologies of children's books, nor the place for Illustration in each one of them. Our goal is to think of Illustration as a physical element of the book and its sensory possibilities.

Within this, we point out the work of the illustrator Květa Pacovská. (fig.3) This author creates picture story books where the text is just an additional resource which she handles, like the textures, embossing, folding, sounds, colors, shapes and still, “where the reader himself is called to participate in the illustration by reflecting his image in the mirror surfaces”. (Godinho M ; Filipe E., 2001)

F3. Květa Pacovská,  
Alphabet. Produced by  
Otto Maier, Ravens-  
burg Buchverlag, 1994

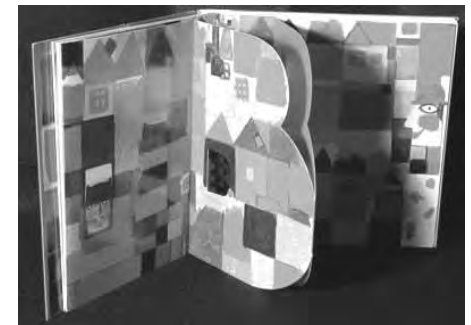


Illustration can be a field of action that expands The next example is a work by the designer Enzo Mari. Mari created illustrations for several books without text and designed objects for children. One is called 'The fable game'. It comprises six tablets whose elements are “forty-five animals, the sun, the moon, a rifle,



a cage, a chestnut husk, eight trees, a log, nine canes, five stones, an apple, a mound of earth, a nest, and two eggs. Each tablet is a unity of a central, and two side scenes.”

The next example is a work by the designer Enzo Mari. Mari created illustrations for several books without text and designed objects for children. One is called ‘The fable game’. It comprises six tablets whose elements are “forty-five animals, the sun, the moon, a rifle, a cage, a chestnut husk, eight trees, a log, nine canes, five stones, an apple, a mound of earth, a nest, and two eggs. Each tablet is a unity of a central, and two side scenes.”

**F4.** Enzo Mari, The fable game. Produced by Danese, Milan. 1971



These tablets are slotted, being possible to fit them in different positions.

The Fable game, not being a book, can be a starting point for a new format of book object, book toy, by pointing to a new form of three-dimensionality of the book. Different from the sensory experience of pre-books by Bruno Munari, here is not the material that encourages creativity but its construction, the changes in its structure.

The composition results always from the intention and interaction with the reader. To read the object it is required to move around, to discover the content from different perspectives. As in pre-books, also in this game there is no beginning or end, any point can be the starting one and any image can be final. Or the beginning of a new story.

There are no limits to the narrative possibilities.

This is also enhanced by the illustrations, with characters and objects graphically very simple. This allows that the stories,

though connected to fables, grow freely in the reader’s imagination. The suggestive images allow the child to create her own scenarios and stories.

In contrast with Mari’s ‘sculpture book’ the designer Katsumi Komagata is the author of books that turn into three-dimensional games. In a partnership between his publisher – One Stroke - and the french publishers – Les Trois Ourses and Les doigts qui rêvent - created two books, Feuilles and Plis et Plans (the last together with Sophie Curttil), two tactile books designed for children with visual impairment.

**F5.** Katsumi Komagata, Plis et Plans, 2002



“Plis et Plans - folds and planes is a tactile book where the image is both form and narration. (...) Pages without text follow, each presenting a geometric form - a circle, a square, a triangle – obtained with cuts and folds. Moving the surfaces and lifting the folds, the forms change; the movement is reversible bringing us back to the starting point. Komagata overturns the traditional form of the book, allowing the reader to experience the space of the page in a new way<sup>7</sup>.”

In these books Katsumi Komagata takes further forward the concept of tactile book through the form and through illustration. All elements of the book are thought to be pleasant when handled and by its simplicity also visually appealing. Designed for younger children and stimulants for children with and without visual impairment. The illustration is no longer a visual element of the book to be an integral part of the object book, created with the aim of permitting a richer experience, both visual and tactile.

One of the publishing houses that participated in these pro-

<sup>7</sup> Extract about the Exhibition “Dedicated to Munari. 1,2,3... Komagata”. Organized by the Scaffale del laboratorio d’arte. Palazzo delle Esposizioni, Roma, 2008



F6. André da Loba,  
Zeitgeist. 2008

jects, 'Les doigts qui rêvent', is an example of a publisher looking for a closer relationship between illustrators, writers and tactile books for children. Among others, its objectives are a further research and awareness among professionals and the public to the publishing of tactile books and make them accessible and of equal quality for children with and without visual impairment. In a first impression, images designed tactitely can be seen as a limitation for an illustrator. It's needed to understand a new way of perception, a new set of codes, a new graphic language, completely different from the illustration designed for not visually impaired readers. The books of Komagata and the examples form 'Les doigts qui rêvent' show that, instead of a limitation, the awareness of visual and tactile possibilities can be a stimulus and a catalyst for new ways for illustration and book design.

The previous examples presented in this study point to objects within the conventional format of a book or with a similar reading. But, as for the storytelling possibilities, can other objects have the same potential as a book?

When watching the objects created by the illustrator André da Loba, interactive storytelling jumps from books to objects. A performance with toys and puppets becomes an open narrative. An illustration shows a character. A character that can turn into a game, which is telling us a story, while being unfolded, opened or turned. These objects are composed by several illustrations that surprise and tell new stories. Though not being a book, this experience is closely connected to the interaction with a book, with its creative possibilities to the reader, the spectator.

Being the book other than a game, a toy, a puppet, a scenario, can it contain these and other objects in its form, behaving differently but nevertheless being a book?

### 3 · Conclusion

This paper started with the question "What is a book?" The research that followed didn't look for a specific definition of what is the book, but for a better understanding of its nature, as an object, as a specific support for a content and also as an interactive, playful object, which promotes imagination and creativity.

The presented works of Bruno Munari, Květa Pacovská, Enzo Mari, Katsumi Komagata and André da Loba raise new questions

about the anatomy of the book, in particular the children's book. What are the communicative possibilities of its materials? How to go beyond its limitations? Within the conventional format of the book, how to make possible for the reader to create freely its own narratives? Bruno Munari's experiments cross some of the boundaries that once defined the book, thinking about each of its elements independently and considering them as equal resources in book design.

Besides Munari's experiments the other examples vary in their definition. For example, Enzo Mari's 'The fable game' is, as the title indicates, a game. Its structure is that of a three-dimensional puzzle, or a sculpture. It's not a book, though the images in its tablets can be 'read' as in a book. The difference lies in its structure and in the possibility of physically constructing and deconstructing narratives. And in the action when reading it: unlike a book, which is moved by our actions, here is as well our body that goes around the object to see and experience it completely.

Reading through handling is also essential when interacting with the book objects of Katsumi Komagata and Květa Pacovská. The pages in their books contain images but also cuts, textures, folds, sounds, different sensory experiences. The image exists as well as form and it's the eyes together with the hands and the body that read it. In some of Komagata's books this experience goes further by being possible for children with visual impairment to experience his books, nonetheless being visually appealing. Is the reaction of Illustration to a visual and simultaneously tactile experience a limitation or a creative opportunity? Komagata's work points to the latter, and for a possible development of Illustration towards a wider understanding of what are the narrative possibilities of image and book. It's needed more research about what are the possible physical resources of a book and look for solutions that are interesting and accessible to a greater number of readers. Storytelling through play and interaction is possible with a book, a game, a toy, a puppet, or any object that by being handled stimulates imagination and the creation of stories. Although distinct from the book we believe that the awareness of the narrative possibilities of these objects can be an important contribution for new ways of thinking and designing children's books.

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# ILLUSTRATION AS A TOOL FOR THE DEVELOPMENT OF VISUAL LITERACY

An Approach Through The Case Study Of Planeta Tangerina



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## Abstract

In a period marked by technical reproducibility and the consequent proliferation of multiple graphical forms, the development of visual literacy is a fundamental strategy for the education of informed and competent individuals able to understand and interpret a more complex reality. In this communication, we will explore how can illustration constitute itself as a fundamental tool for the development of visual literacy. We propose to discuss the links between visual literacy and the (new) role of illustration, from a case study: analysis of some titles published by Planeta Tangerina (PT). How will try underline, the editorial line of PT is a good example to reflect on how the illustration can develop new ways of thinking and acting. This communication is an ongoing investigation, developed under the master's degree in Graphic Design and Editorial Projects at Faculty of Fine Arts, University of Porto.

## Keywords

Illustration, visual studies, visual literacy, Planeta Tangerina.

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## 1 • Introduction

In a period marked by technical reproducibility and the consequent proliferation of different forms visual expression, the development of visual literacy is now a key strategy for understanding and interpretation an increasingly complex reality. In this paper, we decided to explore how illustration can act as a tool for the development of these skills, analysing the illustrations found in Planeta Tangerina's titles. This approach aims to be a first look at this issue, allowing the identification of a set of clues that may develop in future reflections.

First of all, we must define what we'll designate by illustration. This term derives from the Latin *illustratiōne* and means the action of clarify. Maria Isabel Faria and Maria Graça Pericão define, in theirs "Dicionário do Livro – Da escrita ao livro" electrónico, illustration as a medium to "illuminate, give light to a text or a set of texts" [1]. In a clear reference to medieval illuminated manuscripts these authors understand illustration not as a mere transcription of a text, reproducing it faithfully, but as an interpretation.

In this paper, we are not concerned to confront different understandings of the concept of illustration in an attempt to deepen its definition (including distinguishing illustration of other forms of visual representation). We will opt to follow Faria and Pericão's definition considering illustration as all visual representations of texts that can or can't go beyond the exact reproduction provided that they evidenciate and/or increase its meaning.

## 2 • What is visual literacy?

The origin of the term visual literacy is often attributed to James Elkins (Gil, 2011) perhaps because it has been one of the most active voices in affirming the importance of developing visual literacy. On his "Visual Studies - A Skeptical Introduction" published in 2003, Elkins warned of the need for the inclusion of so-called Visual Studies in the academic curricula of American universities.

However, as noted by José Manuel Damasio, in 1969 John Debes have already used the term visual literacy to define the set of skills that are fundamental to the understanding of reality and the development of communication, that we can develop through

the association's vision to others senses and experiences. In this sense, Debes says:

*"Visual Literacy refers to a group of vision-competencies a human being can develop by seeing and at the same time having and integrating other sensory experiences. The development of these competencies is fundamental to normal human learning. When developed, they enable a visually literate person to discriminate and interpret the visible actions, objects, symbols, natural or man-made, that he encounters in his environment. Through the creative use of these competencies, he is able to communicate with others. Through the appreciative use of these competencies, he is able to comprehend and enjoy the masterworks of visual communication" [2].*

Thus, visual literacy refers not only to the biological capacity to see (Gil, 2011), or the ability to recognize a visual expression (Elkins, 2003). Visual literacy can rather be described as the ability to identify, interpret and communicate specific pictorial content and its meaning (Elkins, 2003; Gil, 2011). In this sense, it is understood that "visually literate individual is one who is able to decode and interpret a visual composition, but also one that is able to encode and compose images capable of having a commonly understood meaning" [3].

According to this definition, we could say that visual literacy is composed of three distinct levels. The first one, refers to the ability to identify a visual expression; the second level, after this identification, refers to the ability to interpret. In this process are evoked visual experiences and knowledges deeply conditioned by the social, cultural, and political history of each individual. And finally, the third level relates to the ability to organize this new learning in order to, first, increase our own knowledge about certain reality, and second, to improve our ability to communicate. It is at this level that becomes evident how visual literacy is constituted as a strategy of social action, cultural and political, to the extent that the development of these skills "implies an active commitment to ask questions and seek answers to the multiple

*meanings of the visual experience*” [4].

It is precisely in the second and third level which is evident why visual literacy constitute itself as a key educational component and should be included, as James Elkins (2003) defended, in school curricula. The visual literacy involves the mastery of a set of prior knowledge, understanding and enabling the transmission of visual content. Therefore, these contents should be studied in order to equip individuals with skills essential to the full exercise of citizenship.

### 3 · The urgency of the development of visual literacy

Currently we are faced with a proliferation of multiple forms of representation and pictorial expression. Contrary to earlier historical periods, where the culture was predominantly oral or textual (Elkins, 2003), the contemporary culture became eminently visual. *“We see more images per month or per year (...) than people on the past; and we can also process more images per minute”* [5].

Paradoxically, this proliferation of pictorial expressions has not contributed to the natural development of visual literacy, for several reasons. First, and as noted Gil, “the desire simple experiment [featuring the post-modern societies] emerges as antagonist will understand addition to enjoy” [6]. Moreover, the complex visual expressions have given place to increasingly more simple representations. Today we are trained to read simple and immediate images than the complex and obscure images of the past (Elkins, 2003). The infographics widely used in the media are good examples. These kind of illustrations are designed to be “read” as quickly as possible, immediately communicating its contents and leaving little room for interpretation. In many cases, the infographics are more effective as smaller the level of interpretation is required. Finally, it should be noted that understanding and interpreting some illustrations requires the knowledge of certain codes. Their reading is not an innate process and therefore the understanding and interpretation of many illustrations requires some learning. As John Berger notes, “what we know or what we think affects how we see things” [7]. Martine Joly also warns the increasing risk of being deceived because often we are “influenced, more unconscious than conscious, by the expertise of

some individuals that can ‘manipulate’ submerging us in secretly coded images exploiting our naivety” [8].

In this context, it is still worrying that the growing visuality of contemporary societies contributes to extent the visual illiteracy. Visual literacy, as we have seen, is a key skill for understanding the reality, so it becomes clear the need to stimulate this process now ongoing and continuous.

### 4 · The illustration as a tool for the development of visual literacy

The design is a powerful tool for transmitting knowledge. For Manfredo Massironi drawing is an “instrument so simple but at the same time, so intrinsically elastic that allows the narration of the most diverse modes of complexity” [9].

Many illustrations appear intimately associated with the text, there is a clear correspondence between the verbal and visual language (Massironi: 1982). In complementing the text and “clarify” its meaning, the illustrations assumemum pedagogical character. However, when the illustrations are not redundant to the narrative and articulate with the text in the production of meanings, we are witnessing a greater stimulation of creativity that contributes to the development of visual literacy and hence the critical spirit. In this perspective, illustrators play an important role and an enormous responsibility, once through their illustrations they produce new meanings and new insight into the text (and the world). To reach this, the illustrators have countless possibilities as note Sophie Van der Linden: “read a picture book is not just reading text and pictures (...) is also enjoying the use of a format, framing the relationship between end-leaf and cover with its contents, it is also associate representations, opt for a reading order in the space of the page, adjust the poetry of text with the poetry of image, enjoy the silence of one over the other” [10]. This way of illustrating requires time and attention to reading but, as stated Joly, “sharpens the sense of observation and look, increase knowledge and thereby allows achieving more (in the broad sense of the term) in spontaneous reception of works” [11]. In this context, illustrator and reader take an active role in the construction of meanings: the first launches clues for observation and interpretation of the illustrations and the second is encouraged to fill in the “blanks”,

seizing not only the immediate meaning but also constructing new meanings.

Thus, the illustration becomes critical not only for understanding the text, but also for the promotion and development of visual and verbal comprehension. The illustration thus becomes a valuable tool for teaching and learning can contribute to the development of visual literacy. “The illustrations who make pictures with secrets, link what children know, pently know, and are learning about the world, to ways of presenting the world in books...

Children who encounter such books learn many lessons that are hidden forever from those who more directly from the reading scheme to the worksheet. Compare the textual variety of children’s picture books with that of reading schemes. You will see how the interactions made possible by skilled artist and writes far outweigh can be learned form books made up by readers who offer readers no experiment, no challenge, no real help...” [12].

### 5 · The case of the publisher “Planeta Tangerina”

In the last years, the Portuguese illustration has gained a new momentum. Jose Manuel Cortes emphasizes precisely that “the brilliance of our current illustration is based on the bet that several Portuguese editorial projects has made in the national artistic production” [13].

Publishers like Bruá, Eterogémeas Kalandraka, Mini Orfeu, Pato Lógico, Planeta Tangerina and Tcharam have been contributing to this new breath of portuguese illustration. Since it is impossible to analyze here all these editorial projects we decided in this final section of the article, highlight the Planet Tangerina (PT), a small

Portuguese publisher founded (officially) in 2004, by the hand of Bernardo Carvalho, Isabel Minhos Martins, Joao Gomes Abreu Magdalene and Matoso. This choice was mainly due to the fact that this publisher focus on publishing picture books, presenting themselves as a publisher who bet on that call “album format - one where text and images work together (...) linking up, adding up, making adjustments and readjustments, demand the balance of the whole” [14].

The analysis of PT is interesting because its books are a good

examples of building sophisticated visual texts. The illustrations make visible abstract and complex concepts, encouraging the reader to actively participate in the interpretation of the text and the construction of knowledge. In this sense, as Sophie Van der Linden, the PT authors also believe that to read a book is “read not only words but also images, not just reading pages, but sequences. Read covers, end-leafs, rhythms and changes of pace, reading scenes, plans, details, different types of representation, constantly making connections between elements, enjoying the movement, the noise, the pauses and silence of pages” [14]. An interesting case of analysis, the book is “Todos Fazemos Tudo” (Madalena Matoso, 2011) as it presents “as a traditional book type “meli-melo” providing greater interaction between the reader and the book. In a playful way, PT seeks to promote gender equality, using games created by visual illustrations of basic shapes and colors “at the top of the page is revealed his identity - whether male, if female, whether younger or old; reveal the bottom-up actions (...) readers should make different combinations: turning pages you can swap characters and/or



activities and observe how, at least in this book, no prejudices or preconceived ideas” [14]. In this book, the woman who walks in the park a baby, on the next page, dedicates to DIY. When turning the page, a mother plays football with her son and the father helps his daughter or cooks a meal. Men and woman of different ages share, throughout the book, the same tasks demystifying the preconceived ideas that certain tasks are designed to

F.1 “Todos Fazemos Tudo” (Madalena Matoso, 2011)

specific genres or ages.

Another feature which characterizes the graphical representations of any PT illustrators is the overlapping shapes with opaque colors or transparencies. This technique makes the illustrations are not recognized and interpreted immediately, pointing out the need to be revisited. In this regard says in an interview, Madalena Matoso: “We all like to turn something complex into something simple, without vulgarizing or demote. An image or a phrase can sometimes be “unfolded” opening many possibilities and thus enable several levels of reading. The same person, reading a book more than once, can find details that had not noticed at first sight.” For example, the publication “Duas Estradas” (Martins and Carvalho, 2009), features two stories - which can be read in two ways: one, from left to right and the other in reverse - on same route, through two different roads, marked with different colors - the A1 motorway represented in blue, and the old national road N216 (which actually does not exist) drawn in red - throughout the book both roads intersect and overlap. The stories can be read separately or simultaneously and require special attention in the allocation of meanings suggested there more or less implied. Here, “are dealt with themes such as the time and the relationship between past and present, the evolution and development, family dynamics and affections, the management of spaces and the (dis) organization of cities, the routines, the relationship with nature and the landscape natural and interpersonal relationships” [15].

“A Grande Invasão” (Martins and Carvalho, 2007) explores “the presence of the car in contemporary societies, as well as how, gradually, through this vehicle became central in our day-to-day, gaining symbolic meanings, social and even cultural matters over which reflect” [15]. This publication also presents two parallel stories that can be read simultaneously or separately. Bernardo Carvalho scored all double pages with a small yellow figure who, in the company of his dog, looks for a yellow car. These characters evoke, with a certain humor and irony, the theme of “main” narrative. Equally demanding in terms of reading is the book “Andar por aí” (Martins and Matoso, 2009), remarkable example for the abstract character of the illustrations, which underlie the (re)reading so that progressively be added meanings. Here, the illustra-

tions complement the text revealing on one hand, the relationship of complicity between grandfather and grandson and, on other hand, the grandson’s imaginary result of their games and the time they spend together. “The images recreated in the style of illustrator, characters and actions, real and fantastic, crossing the empirical universe with another imaginary” [15] inviting the reader to complete the forms and fill the voids thereby stimulating its own imaginatio. The reader is thus estimulatod to assign mean-



**F.2** Bernardo Carvalho  
ilustration for “Um dia  
na Praia” (2011)

ings that must be reframed according to the new information that reveal with the turn of each page.

In the books *Um dia na Praia* or *Praia Mar* (Bernardo Carvalho, 2008; Bernardo Carvalho, 2011) is clear the intention of challenging the reader to fill in the blanks. This intention is mentioned by the editors in the respective “Proposta de Exploração para Pais e Educadores” available online at the publisher’s website that “Words are not visible on pages so this is an open book, more subjective, allowing multiple interpretations and therefore it is also a useful tool to stimulate the ability of oral interpretation, imagination” [16].

Some of the titles of PT enter the domain of metaphor insofar



**F.3** Bernardo Carvalho  
illustration for “Pê  
de Pai” (Martins and  
Carvalho, 2006)

as the graphics are displayed with meanings which were not originally anticipated. In the book “Pê de Pai” (Martins and Carvalho, 2006) there is a set of associations between words and graphics, challenging the reader to decode the meanings of terms such as “brake father” or “father safe”, metaphors to the confident paternal figure, or “father arrow” metaphor to the strict paternal figure. The combination of text and image is used as a theme to explore, in subtle and very creative way, the relationship of complicity between father and son, demystifying the experience of growing up in single-parent families. In the illustrations, “the absence of contour line points the existing color game, since it is the color separation that distinguishes the shapes that represent the characters. These are recreated in a minimalist way, valuing only the anatomical elements most significant in terms of the manifestation of affection - the mouth, eyes, arms ...” [17].

In different ways, but always through the illustration, the text and the book itself as object, readers are encouraged to think critically about the content present in illustrated albums PT.

Moreover, by providing a “shared reading, held a family that promotes dialogue, exchange of ideas, and lead, ultimately, to the sharing of feelings (...) the book fulfills diverse purposes that clearly go beyond the same literary and artistic domain, but plays an important role in terms of the socialization of the child, his training as a person and as a player” [17].

Its editorial line is therefore a pertinent example to reflect on the role of illustration in developing new skills and encouragement from readers (overcoats children and young people) to new ways of thinking and acting.

## 6 • Conclusion

Traditionally, the illustration role tends to be undervalued because it is often considered only its recreational function ignoring other functions, for example, to facilitate the understanding and interpretation accompanying text.

This view is partly a reflection of current policies perpetuate a teaching model that tends to devalue artistic expression. As we saw, illustration “can also be an aid in the process of learning to read, since, as mentioned, strengthens the ability of meaning and

association” [18] as well as help develop new competence stimulating new ways of thinking and acting.

In this paper we tried to show how the illustration can operate either in identifying visual representations, both in interpretation and construction of more complex representations. In the context of contemporary society, marked by the proliferation of various forms pictorial representation, the development of visual literacy is a key element for the formation of more informed and competent individuals. It is therefore important to strengthen the role of illustration in the teaching-learning context where you can come to assume a decisive role, establishing itself as a tool for development of visual literacy as “that teaches us to do otherwise, to provide a look not naive about the fascinating complexity of the images that surround us” [19].

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## GENERIC AND CERTIFIED FACIAL RIG MECHANICAL APPROACHES FOR KEY FRAME CHARACTER ANIMATION



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### Abstract

A character facial rig is a set of mechanical and control structures that allow an animator to pose and key frame a character's face in a timeline. The setup of the rig mechanics is a key task that digital artists perform to assure subtle facialskin deformations resulting from the manipulation of the rig controls. But setting the facial rig mechanics is a laborious and time-consuming process because artists need to prevent awkward facial deformations. This poses an interesting question: is it possible to improve the setup of facial rig mechanics for key frame character facial animation? A generic and certified approach is presented in this paper.

### Keywords

Character faces, facial  
rigs, rig mechanics, key  
frame animation.

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## 1 • Introduction

In films, the faces of animated characters have complex rig mechanics and controls that allow creating appealing facial expressions. The mechanics deal with the behaviors that the character's face needs to perform whereas the controls allow animators to trigger the underlying mechanics. Together, mechanics and controls are the facial rig of a character.

Before an animator can manipulate a facial rig, the rig mechanics need to be setup by an expert digital artist, the rigger. This job is hard because the face can “twist and pull into 5000 expressions” [1]. In the last 15-years [2] (since Toy Story [3]) there has been a great disparity of facial rig approaches built by many artists for key frame character animation.

This paper presents generic and certified facial rig mechanics as design approaches that are optimized to improve the laborious and time-consuming process of facial rigging. These approaches are focused in the human face as a basis for other facial styles, because all faces are expected to have human features in order to be perceived by an audience as expressive characters [4]. The approaches are also focused in key frame [5, 6] because: (i) it is the animation approach that artists most use [7], (ii) it is the most accessible and the most affordable as it does not require expensive equipment, (iii) the results coming from other animation approaches still need to be adjusted via key frame, (iv) and the fact that key frame is at its peak of growth [7], thus more prone to welcoming these approaches.

The implementation of the approaches is done in the open-source 3D tool Blender because (i) it is a qualified and accessible platform, and because of the (ii) opportunity to cause a significant impact in their growing community of digital artists, due to Blender users being highly predisposed to validation, as seen in this preliminary result [8].

## 2 • Facial Rig Mechanics: Approaches Certification

The certification of optimized facial rig mechanical design approaches for key frame character animation involves a two stage process: (i) realizing the behaviors of the human face and (ii) constructing the corresponding adequate facial rig mechanical approaches.

The behaviors are collected using the muscular activity in the Facial Action Coding System (FACS), categorized by Ekman and Friesen [9] into Action Units (AUs), Action Descriptors (ADs) and Gross Behavior Codes (GBCs). These are then realized as spatial transformations via the flight dynamics orientation, where “rotations are defined as roll, pitch, and yaw, mapped to X, Y and Z in a z-up coordinate system” [10]. This is the case in Blender: positive or negative values of X, Y and Z correspond to, respectively, the right or left, frontwards or backwards and upwards or downwards motion directions.

The construction of the rig mechanical approaches lies in determining which of the two main facial rigging techniques to use per facial region: bones or blendshape target models (BTMs). Bones are articulated hierarchical structures connected to each other to work in a parent-child relationship. Bone-driven deformations use skinning [11]: the smooth [12] or rigid [13] weighting of the influence that each bone has in each vertex. Bones allow a rotation-based motion of the facial skin [14] with hierarchically averaged weight values, being more suitable for arcing deformations [15] in larger or denser facial regions. BTMs are differently sculpted duplicates of a facial model that blend from one to the other via a weight parameter. They allow a per-vertex tweak of the facial geometry [14], being more suited for predefined linear skin deformations [15] in lesser dense facial areas. Other rigging techniques such as clusters, lattices and wires are not considered in order to (i) prevent inconsistency, as these technicalities are (ii) less often used by artists [2] and (iii) are not available in the main 3D tools. In contrast, bones and BTMs (i) are found in the main 3D tools (e.g. called skelegons and endomorphs in Lightwave) and (ii) are the most efficient as (iii) artists use them the most [2]. Fig. 1 shows bones and BTMs.

Fig. 1. Left: bones distributed in a character's lips. Center and Right: BTMs for the character's lips.



To define whether to use bones or BTMs and how many per facial region, a set of construction and deformation conditions is considered. Construction is relative to the work of the rigger to build the rig structures and deformation is the resulting visual quality. The conditions are (i) hierarchy relation, (ii) predefined motion, (iii) motion dynamics and (iv) deformation area size. Hierarchy relation is the mechanics interaction with each other via the skinning values. Predefined motion is the chance for behavior prediction and resulting mechanical degree of freedom and creativity. Motion dynamics is the evaluation of whether the motion is linear or non-linear. Deformation area size is the behavior's deformation dimension: small, medium or large. The following sections present the certification of the rig mechanics for the human eyebrows, eyelids, eyeballs, nose, cheeks, lips and jaw.

## 2.1 · Eyebrows

Table 1 and Fig. 2 respectively list and illustrate the deformation areas of the eyebrows: inner, mid and outer (AUs 1, 4, 2), respectively the upwards or downwards and/or inwards; the upwards or downwards; and the upwards motion directions.

Table 1. Identification of the eyebrows behaviors from FACS [8].

Anatomic Area	Motion Types & Axis		Corresponding AUs, ADs & GBCs	Motion Directions
Eyebrows	Voluntary	Inner Brow Raiser (IBR)	1	↑↓←
		Mid Brow Raise/Lower (MBRL)	4	↑↓
		Outer Brow Raiser (OBR)	2	↑

Fig. 2. Left: eyebrows muscular activity (FACS examples [8]). Right: eyebrows bone mechanics.



Table 2. The rig mechanics certification approach for the eyebrows regions.

Motion Types	Construction and Deformation Conditions				Resulting Mechanical Approach	Amount
	Hierarchy Relation	Predefined Motion	Motion Dynamics	Deformation Area Size		
IBR	Yes	Yes	Linear	Medium	Bones	6
MBRL						
OBR						

In terms of hierarchy relation, bones allow averaged skinning values among each part of each eyebrow. For predefined motion and motion dynamics, despite the eyebrows motions are quite predictable and linear, there are eight directions per eyebrow, meaning that eight BTMs would be necessary instead of only three bones, which would result in more work for the rigger. In terms of deformation area size, the behaviors occupy sequential medium sized areas, which are better encompassed and distributed by a low number of bones.

## 2.2 · Eyelids

Table 3 and Fig. 3 respectively list and illustrate the eyelids behaviors: roll and pitch (AUs 5, 7, 43, 45 and 46), respectively the voluntary upwards or downwards (X rotation in side view) and the involuntary left or right (Y rotation in front view) motion directions.

Table 2 and Fig. 2 respectively list and illustrate the eyebrows rig mechanics. Six bones are used, three per each eyebrow region (inner, mid, outer).

Anatomic Area	Motion Types & Axis		Corresponding AUs, ADs & GBCs	Motion Directions
Eyelids	Voluntary	Roll (Rotation X)	5, 7, 43, 45, 46	↑↓
	Involuntary	Pitch (Rotation Y)		→←

Table 3. Identification of the eyelids behaviors from FACS [8].



Fig. 3. Left: eyelids muscular activity (FACS examples [8]). Right: eyelids bone mechanics.

Table 4 and Fig. 3 respectively list and illustrate the eyelids rig mechanics. Four bones are used, one per each eyelid (upper left, lower left, upper right and lower right).

Motion Types	Construction and Deformation Conditions				Resulting Mechanical Approach	Amount
	Hierarchy Relation	Predefined Motion	Motion Dynamics	Deformation Area Size		
Roll	Yes		Non-linear	Small	Bones	4
Pitch						

Table 4. The rig mechanics certification approach for the eyelids regions.

Bones provide a hierarchy relation that eases the skinning values interaction between the eyelids, eyebrows and head. The rotation-based motion of the eyelids around the eyeballs does not have a predefined motion as the angle of rotation varies, suggesting bones to be used. The eyelids motion dynamics is non-linear, also indicating the use of bones, otherwise a large number of BTMs would be required (at least three per eyelid instead of a single bone), resulting in more work for the rigger. The deformation area size is small but there is a high vertex-count in the eyelids region, thus being better encompassed using bones.

### 2.3 · Eyeballs

Table 5 and Fig. 4 respectively list and illustrate the eyeballs behaviors: roll (AUs 63 and 64) and yaw (AUs 61, 62, 65 and 66), respectively the upwards or downwards (X rotation in side view) and the left or right (Z rotation in top view) motion directions.

Table 5. Identification of the eyeballs behaviors from FACS [8].

Anatomic Area	Motion Types & Axis		Corresponding AUs, ADs & GBCs	Motion Directions
Eyeballs	Voluntary	Roll (Rotation X)	63, 64	↑↓
		Yaw (Rotation Z)	61, 62, 65, 66	→←

Fig. 4. Left: eyeballs muscular activity (FACS examples [8]). Right: eyeballs bone mechanics.



Table 6 and Fig. 4 respectively list and illustrate the eyeballs rig mechanics. Two bones are used, one per each eyeball.

Table 6. The rig mechanics certification approach for the eyeballs.

Motion Types	Construction and Deformation Conditions				Resulting Mechanical Approach	Amount
	Hierarchy Relation	Predefined Motion	Motion Dynamics	Deformation Area Size		
Roll			Non-linear	Medium	Bones	2
Yaw						

The eyeballs can be built as separate meshes from the facial skin, thus not subjected to hierarchy relation. They do not have a predefined motion as their rotation angle varies via their non-linear motion dynamics, suggesting using bones instead of a large number of BTMs. Their deformation area size is medium and contained, thus better encompassed via bones.

### 2.4 · Nose

Table 7 and Fig. 5 respectively list and illustrate the nose behaviors: sniff (GBC 40), snarl (AU 9) and compress or dilate (AUs 38, 39), respectively the upwards or downwards and/or left or right; the upwards or downwards; and the inwards or outwards motion directions.

Anatomic Area	Motion Types & Axis		Corresponding AUs, ADs & GBCs	Motion Directions
Nose	Voluntary	Sniff	40	↑↓→←
		Snarl	9	↑↓
	Involuntary	Compress or Dilate (NCD)	38, 39	↔



Table 7. Identification of the nose behaviors from FACS [8].

Fig. 5. Left: nose muscular activity (FACS examples [8]). Right: snarl BTMs for the nose.

Table 8 and Fig. 5 respectively list and illustrate the nose rig mechanics. Eight BTMs are used, four for the sniff, two for the snarl (one per side), two for the compress and dilate.

Motion Types	Construction and Deformation Conditions				Resulting Mechanical Approach	Amount
	Hierarchy Relation	Predefined Motion	Motion Dynamics	Deformation Area Size		
Sniff		Yes	Linear	Medium	BTMs	4
Snarl						2
NCD						2

Table 8. The rig mechanics certification approach for the nose.

The motions of the nose can be narrowed down to a number of predefined motions responsible for specific wrinkles in areas with medium deformation area sizes. BTMs are an ideal approach because of the ability to independently sculpt the linear motion dynamics of the nose, which are not dependent of hierarchy relations in other components of the rig.

### 2.5 · Cheeks

Table 9 and Fig. 6 respectively list and illustrate the cheeks behaviors: cheek raiser/lower (AU 6) and suck or blow/puff (ADs 33, 34 and 35), respectively the upwards or downwards and the inwards or outwards motion directions.

Table 9. Identification  
of the cheeks behaviors  
from FACS [8].

Anatomic Area	Motion Types & Axis		Corresponding AUs, ADs & GBCs	Motion Directions
Cheeks	Voluntary	Cheek Raiser/Lower (CRL)	6	↑↓
		Suck or Blow/Puff (SBP)	33, 34, 35	↔

Fig. 6. Left: cheeks  
muscular activity  
(FACS examples [8]).  
Right: suck BTMs for  
the cheeks.

Table 10 and Fig. 6 respectively list and illustrate the cheeks rig mechanics. Four BTMs are used for the CRL (two per cheek) and another four BTMs for the SBP (again two per each cheek).

Table 10. The rig  
mechanics certification  
approach for the  
cheeks regions.

Motion Types	Construction and Deformation Conditions				Resulting Mechanical Approach	Amount
	Hierarchy Relation	Predefined Motion	Motion Dynamics	Deformation Area Size		
CRL		Yes	Linear	Medium	BTMs	4
SBP						4

As with the nose, the cheeks behaviors can also be narrowed down to a number of predefined motions responsible for deformations with a linear motion dynamics in areas with medium deformation area sizes. Furthermore, the behaviors are not directly dependent of hierarchy relations relative to other components of the facial rig. As a result, the sculpting ability provided by BTMs will allow the rigger to simulate properly the cheeks behaviors.

## 2.6 · Lips

Table 11 and Fig. 7 respectively list and illustrate the lips behaviors: overall shaping (AUs 11, 13, 8+25, ADs 32, 36, 37 and GBC 50), upper lip raiser (AU 10), lower lip depressor (AU 16+25), narrow or widen (AUs 20 and 23), frown or smile (AUs 12, 14 and 15) and pucker, suck, presser or funneler (AUs 18, 22, 24 and 28), respectively the upwards or downwards and/or left or right and/or frontwards or backwards; the upwards; the downwards; the left or right; the down and left or right and/or the upwards and left or right; and the upwards or downwards and left or right and frontwards or backwards motion directions.

Table 11. Identification  
of the lips behaviors  
from FACS [8].

Anatomic Area	Motion Types & Axis		Corresponding AUs, ADs & GBCs	Motion Directions
Lips	Voluntary	Overall Shaping (OS) (Translation/Rotation XYZ)	11, 13, 8+25, 32, 36, 37, 50	↕↔↕↔↕↔
		Upper Lip Raiser (ULR)	10	↑
		Lower Lip Depressor (LLD)	16+25	↓
		Narrow or Widen (NW)	20, 23	↔
		Frown or Smile (FS)	12, 14, 15	↕↔↕↔↕↔
		Pucker, Suck, Presser or Funneler (PSPF)	18, 22, 24, 28	↕↔↕↔↕↔

Fig. 7. Left: lips mus-  
cular activity (FACS  
examples [8]). Right:  
lips bones and BTMs  
deformation.

Table 12 and Fig. 7 respectively list and illustrate the lips rig mechanics. A minimum number of eight bones is recommended for the overall shaping and fourteen BTMs for the remaining behaviors. To achieve more complex expressions such as visemes, another eight bones can be added; although by default any extra bones may be hidden and only accessible to the animator as an extra option for further manipulation precision.

Motion Types	Construction and Deformation Conditions				Resulting Mechanical Approach	Amount
	Hierarchy Relation	Predefined Motion	Motion Dynamics	Deformation Area Size		
OS	Yes		Linear and Non-linear	Medium	Bones	8
ULR		Yes			BTMs	1
LLD						1
NW						4
FS						4
PSPF						4

Table 12. The rig  
mechanics certification  
approach for the lips.

The lips are the most complex region to rig in a facial model because a combination of bones and BTMs is required to cope with their vast range of behaviors. In terms of hierarchy relation, a distribution of eight bones along the upper and lower lips (as seen in Figures 1 and 7) assures a proper interaction with other rig components (e.g. with upper and lower jaw bones) via the averaging of the skinning values. This also allows for an accurate overall shap-

ing of the lips, to cope with the need to adjust deformation details which do not have an exact predefined motion. A total of eight extra bones, located in-between the base eight bones, can assure a higher deformation precision. The motion dynamics in this case is both linear and non-linear as the lips can be moved and twisted in each individual region of the base eight bones, hence the use of bones for translation and rotation. The lips medium deformation area size suggests the use of bones for the purpose of pose adjustment and the use of BTMs to achieve general predefined poses. The other behaviors of the lips, listed in Table 11, are more common expressions, sometimes extended to include well defined poses such as the simulation of visemes. The former can be considered predefined motions with no direct hierarchy relation to other components in the facial rig. Despite occupying a medium-sized deformation area, these can be pre-built using the vertex-based sculpting benefit of BTMs. This is a more delicate job for the rigger but one that produces an appealing final visual result.

## 2.7 · Jaw

Table 13 and Fig. 8 respectively list and illustrate the jaw behaviors: roll (AUs 25, 26, 27), thrust (AD 29), yaw (AD 30) and flex (AD 31), respectively the upwards or downwards (X rotation in side view); frontwards or backwards (Y translation in side view); left or right (Z rotation in top view) and the inwards or outwards motion directions (the last resulting from the jaw clenching and better perceived in a front view).

Table 13. Identification of the jaw behaviors from FACS [8].

Anatomic Area	Motion Types & Axis		Corresponding AUs, ADs & GBCs	Motion Directions
Jaw	Voluntary	Roll (Rotation X)	25, 26, 27	↑↓
		Thrust (Translation Y)	29	↗↘
		Yaw (Rotation Z)	30	→←
	Involuntary	Flex	31	↔

Fig. 8. Left: jaw muscular activity (FACS examples [8]). Right: a jaw bones deformation.



Table 14 and Fig. 8 respectively list and illustrate the jaw rig mechanics. Two bones are used for roll, thrust, yaw and two BTMs (one per side) for the flex behavior.

Motion Types	Construction and Deformation Conditions				Resulting Mechanical Approach	Amount
	Hierarchy Relation	Predefined Motion	Motion Dynamics	Deformation Area Size		
Roll	Yes		Non-linear	Large	Bones	2
Thrust			Linear			
Yaw			Non-linear			
Flex		Yes	Linear	Small	BTMs	2

Table 14. The rig mechanics certification approach for the jaw region.

Although not as complex as the lips, the jaw region also uses a rig based on bones and BTMs to cope with its deformations. In terms of hierarchy relation, two bones for the roll, thrust and yaw (upper and lower jaw) prevail as many BTMs would be required instead. Bones also allow averaged skinning values between other bones (e.g. neck, head and lips). In terms of predefined motion, bones suit the jaw as their translation and rotation values cannot be predefined. For the flex behavior, pre-built BTMs are more indicated due to it being a predefined involuntary motion driven by the jaw clenching. In terms of motion dynamics, bones for the roll and yaw fit the non-linear nature of these motions. The thrust, despite being a linear motion, can be dealt with, by sympathy, via the lower jaw bone, as the skinning values are the same. The flex is also a linear lateral bulge of the facial skin, thus adequate to the linear-based motion of BTMs. In terms of the deformation area size, bones for the roll, thrust and yaw behaviors encompass the large occupational influence of these behaviors allowing a faster skinning in this region. In opposite, the flex behavior occurs in a smaller deformation area size, with a minor vertex-count, thus it will not be tedious for the rigger to sculpt using the vertex-based editing benefit of BTMs.

## 3 · Conclusions and Future Work

The facial rig mechanical approaches presented in this paper are generic due to their focus in the human face as a basis for other facial styles; and are certified because they are based in a set of construction and deformation conditions. Although this paper focuses in the alienation of FACS-based behaviors to rig mechanical approaches, as FACS is likely the most detailed reference in facial

behavior, the final rig system resulting from this study is not solely FACS-based, as FACS does not include tongue, for instance. For future work there are short to long term goals to accomplish. In the short term, the possibility to extend the combination of bones and BTMs found in the lips and jaw to other facial regions. In the midterm, the description of the remaining rig mechanical components in the facial rig approaches, which includes a flexible network of naming conventions, constraints, drivers, properties, classes and operators. In the long term, upon completion of the rig mechanics, follows the construction of optimized rig control structures, or user interfaces (UIs), to be assessed and validated by animators. The final goal is to reach a straightforward and optimized facial rig design approach for riggers, through which the animators can more effectively control the subtleties of a facial model.

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# STEREOSCOPIC 3D

When watching is animating



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## Abstract

The stereoscopic 3D is definitely dealing with problems involved by its technical process to the point of creating a paradox that still need to be explained. One of the most relevant undesired effects is the layered aspect of the picture which is destroying the image as a whole. In fact, the cinema industry, by thinking only in terms of spatial immersion of the spectator, wishing the image to get out of its medium to surround and reach the viewers' body, forgot not only the image qualities as such but also that the image is already a total visual experience. To resume, with S3D you are strictly immersed on a sensational side by relating to the spatial effect, it's a fact, but on a sensitive and cognitive side, you are not relating to the image as it was before. On a semiotic level the image as a full icon and as a full world, unity or "reality" is not anymore. To separate the picture elements on different virtual panels is giving this sensation of pop-up books or Puppet Theater evolving on different stage set levels. Indeed, each figure seems like cut out so that the S3D is in the end just a more or less progressive jump between layers. Perceiving each figure detached from a background, and more, perceiving them in movement, floating or sliding, distancing relatively to each other, gives ironically the sensation of flatness and strangeness. In the end we will argue that by trying to give a new dimension to the image, the S3D experience is not only ironically giving a feel of the 2D but is also implicating a new form of animation by the fusing process of two images on the one hand and by the need for depth continuity that layered image is lacking.

## Keywords

Animation; Stereoscopy;  
3D; Cardboardin; Fusing;  
Layering; Virtual; Depth;  
Space; Continuity.

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## 1 · Which experience of the image?

We always hear about how much the quality of the picture and so the movie experience in stereoscopic 3D is partially spoiled by the technical process (blur, lack of luminosity, shady colors, image resolution divided, image tiring on the eyes and nerves) [1]. However, what seems to be the most relevant undesired effect is the layered aspect of the picture to the point it is disuniting the picture as a whole. This common issue is generally known as the “cardboarding” [2]. In fact, the cinema industry, by thinking only in terms of spatial immersion of the spectator, wishing the image to get out of its medium to surround and reach the viewers’ body, forgot not only about the image qualities as such but also that the image is already a visual experience in itself. Indeed, with S3D the picture seems to get off the screen, but to the price of pulling out or separating the image elements on different virtual panels, giving this sensation of pop-up books or Puppet Theater evolving on different stage levels. These books’ “animation” works with the articulation of the elements altogether precisely to create a spatial unity, the planes being structural elements in this case (as in the theater mechanically animated sets). On the contrary, in the S3D movie it is rather a collateral effect, dislocating the image and destroying its reality, this kind of “vision” that an image induces when it is one. By manipulating the filmic picture, the eye is focusing on these elements sliding and not anymore on the reality effect of the movement and on the roaming in the infinity of the full world the picture creates, which is amongst the most primordial facts why we get immersed at the cinema normally [3].

With S3D you are strictly immersed on a sensational side [4] by relating to the spatial effect, it’s a fact, but on a sensitive and cognitive side, you are feeling way out of the image as a pure visual experience, based on credulity and on an active look. In fact, the sensation of flatness recalls the materiality of an image, being it a screen projection, a page of paper, a flag, and to resume: single planes. Normally, this is the very materiality of the image the artist is trying to make you forget through visual pleasures. Ironically, with S3D, the image is not only one plane but lots, so that you are tautologically looking at planes which are not leading to one structure or complex like the single plane of an image is. Seeing many planes becoming virtually tangible is breaking the image

as such. You feel yourself as someone viewing, not someone just seeing something and you are constantly recalled that you are precisely looking at something, in front of something. Somehow you become obsessed by the surfaces instead of being attracted by what is on. If you can’t focus on one surface content and “visual world” it is because there is virtually too many surfaces or planes, accidentally generated.

Amongst all the semiotic problems this image implies, one of the simpler has been underestimated, the iconicity of the image as a whole when all the icons mix together, unified not only by the medium principles but also by the work of art. Indeed, on a semiotic level the image as a full icon is not anymore. As a result, it is as if everything was “fighting” at the image to be the more iconic (and the more palpable), the icons not being anymore on the same level. In fact, the depth sensation has to be experienced through the images and via picture effects as the cinema is doing since the beginning, without taking a step on the elementary condition of the primary mode of experiencing the image but by working on a structural level as the 3D works in the digital effect and video games for example.

By setting different layers which construct a series of multiple foreground and background, the elements on the screen are not perceived as one image but a multitude of images, killing the reality that an image is creating itself when it is one. Perceiving each figure detached from another surface, and more, perceiving them in movement, floating or sliding, distancing relatively to each other, gives ironically the sensation of flatness and strangeness in spite of the depth effect. Somehow, each figure seems like cut out from the rest, this flat status being a pure consequence of its relation to movement and to the other layers. In the end we will argue that by giving a new dimension to the image, the S3D experience is ironically giving a feel of the 2D. Putting the emphasis on distinct elements like a ball, a tree or a character is making the image not anymore a sensitive surface which, as a visual space, was making you roam and wonder freely in it and through it. As a visual experience the image was already virtual somehow before this new virtuality was found through S3D technic. Instead, with S3D, the image is not a virtual implosion as it was fantasize back in times where it was said you penetrate the window of the picture

and enter a world but more a virtual explosion where iconic fragments try to reach you actively: you're not being absorbed, you're surrounded. If it's indeed the sensation felt but as seen, the explosion of the image is also an iconic explosion which will have ramification on a cognitive level. This explosion is not seeing the elements getting out in the real world as expected, they are rather floating in an internal abstract space that produces this sensation of strangeness we all know watching the S3D picture, showing its own limits and so its own interiority instead of showing exteriority as expected. So, feeling the distance between the layers, from the foreground to the background has for consequences to enhance the spatiality of the picture as a closed virtual world, making it less credible and accessible. Indeed, such a hermetic image won't let people feel surrounded neither feeling able to "come inside" by virtually penetrating it.

In the end, is 3D about entering the image or the image to enter or penetrate reality?[5] To us, it seems that even if the desire is the image (through the virtual apparatus) to penetrate reality by becoming a full iconic entity working as an object subject to realness, the truth is that we are more in the first case. We enter the image precisely via the fragmentation, this strict decomposition being an analytic view on what could be related to traditional animation celluloid layers, except it is as if you were penetrating the machinery of the picture. The thing is that with the animated film, even with some experimental movies you are never penetrating the articulation of the frames altogether, instead, you are experiencing the fuse, the result of this articulation even if you can be aware of the process via its numerous "failures". So, navigating through the "technological" depth (the layered aspect of the picture) is not making you feel these elements building or filling a three dimensional space neither they are sharing the same space with the spectator: it's more the reverse, they are affirming their own space. Maybe the question should be to know if we want to experience an object virtually (the hologram) or if we want to experience the virtual nature of an image which is still working as a virtual space in itself, belonging to the vagrant "story" of the eyes which are articulating and more, animating the image.

5. "3D is not a world coming through a window but a window into our world", In: 20th Century Fox, Titanic les étapes d'une conversion en 3D, Commercial, youtube.com, <http://www.youtube.com/watch?v=mIEW-MnMkBI&feature=plcp>

## 2 · The paradox of virtual depth

First and foremost, before talking more precisely about the layering process of the picture leading to carboarding, we have to precise the following point which is a base to understand the act of perception in itself and which explains why we still have the pure consciousness of the screen materiality and experience in S3D, holography or lenticular 3D. To be clear, you can resume the S3D basics to the middle ground, the background and the foreground, the first one being spatially disposed on the screen level, working as a starting point to produce depth by "digging" a background or by "spurts" or elements coming out of the middle ground by the foreground. These 3 levels or planes are in fact called the following manner: the middle ground is the "zero plane" or zero parallax plane" where none of the two "kind" of depth can be perceived (due to the distance of the object being too far for each eye to not perceive the same image or "information"). This image will appear in front of "Positive Parallax" elements and behind "Negative Parallax" elements, the first one being the background and the second one the foreground[6]. In the end, the zero plane would be like the glass of a window where the reflections, for example, makes you feel you are still looking at and through something. We'll come back to that.

We quickly understand the notion of visual jump that is effective here through a more or less explosive or implosive magnitude, artificially created via the difference or the gap between the two images (or "point of view"). When the brain is mixing or fusing this two pictures, if this gap, or parallax, is larger than the distance between the human eyes (around 60mm) it will create an impressive but disruptive effect. In the spectacular and sensational way of thinking the S3D cinema, it is precisely on that so called "hyper stereo"[7] effect, which is an excess of depth, that the creators relies on. Indeed, if the S3D cinema was to be a realistic cinema it still would be difficult for the following reason: there is no progressive distance between the elements from the front to the bottom of the picture's space representation that would work like the human view. In the recording process of the two pictures (or more in the case of lenticular 3D) each element is separated by the same distance, not respecting the natural "atmospheric perspective". Indeed, from one point where the object is far enough from your

6. Mendiburu B., 3D Movie Making: Stereoscopic Digital Cinema from Script to Screen, Focal Press (2009), p. 16 and 181

7. Mendiburu B., 3D Movie Making: Stereoscopic Digital Cinema from Script to Screen, Focal Press (2009), p. 28

eyes there is no difference between what the left or the right eye see. This is precisely this absence of progressive way of viewing where the more the object is far from you the less you see its depth that creates this cardboarding which will be more or less effective depending of the difference between the two pictures mixed. It is underlying the lack of unity through the absence of progressive depth of this picture that makes it a monstrous, absurd and paradoxical image to the brain. In fact, every element on the picture, by having the same intensity of depth to your eye makes the global notion and sensation of depth in itself, unviable. We could say the eye is not transported into the common and natural “void” of the vision, finding its infinite point in the progressive flatness of the distant. Moreover, the picture is always saw from a distance, you are not surrounded by it and you are not sticking the eye to it, you still are watching a screen, you are not at the place of the camera (or maybe you would need, at least, to be surrounded by the bigger image possible).

Another point about the cardboarding effect is the lack of quantifying marks in this kind of image: “Card-boarding is a result of stereo vision digitization, in other words a limitation due to a finite stereo acuity. We can see big depth differences but not small ones” [8]. That way, all the stereo effect has to be magnified by the largest screen possible to be able to catch part of these small differences that are still insufficient however to feel the depth, beyond the iconic figure felt detached through the perception of its global form and borders.

### 3 · Towards a “becoming-holographic” of the image?

Backing to the matter of the picture understood more and more as a virtual object, we could say that the becoming-holographic of the image or the tendency to transform an image into a plain virtual object, is stifled by the continuity problem of the image – which is not “hidden” in the case of the S3D as it is with the moving picture rendering process for example. In S3D an impression of continuity can’t be found because the whole experience of this image is not giving you an experience of completeness. The impression, to be complete, do not needs only to trick the perception but needs each sensitive quality to work in one same direction. In

other words you have not to focus on the depth through navigating between layers but feel the depth as one and unique impression through the object properties, the loss of landmark and reference point in a linear and unified space. To resume, the 3D has to be more than just a single and simple effect as part of a medium (here the motion picture) but has to be a medium in itself. In fact, the experience must not be something added to the normal moving picture (and here destroying partially the movie experience), but has to be something else than the movie as we know or even something else than the image as we know it. Indeed, the image as an experience has to be rethought so that S3D becomes a specific mode of expression, beyond the simple effect and the trial to impress.

On a visual level, the space continuity the normal image usually implies seems in fact linked to its flat condition. That continuity could also be found in the presence of a virtual object integrated in the real space. However it is very important to draw the difference between the depth of an image with its own accepted limits to give the three dimensional aspects and impression – as it is still an image, a flat world full of its condition of image and yet constituting an environment. Differently, a virtual object designed as a kind of visual sculpture moving lonely in our real space seems to be way more valid as a 3D “image”. This very aspect of the virtual sculpture being a solution to the creation of an environment that can surround the spectator is in fact fundamental and at the origin of this becoming-holographic tendency even if it is not happening. Indeed, the point with creating holographic objects is that, by being numerous they can create an environment of their own, transforming the space, using the infinity of real space to produce a kind of filled area, a decorative space, magnifying real space which is working as a base. The image, by losing its virtue of being a full environment of its own, when being just the realization of an object’s shape in real space, can nevertheless, by multiplying in the real space, inhabit it. Here, the lack of continuity link between these objects is being compensated by the unifying area of real space as a base. For now, the hologram as we know it is much more to be compared to another kind of S3D image than to a virtual object you could turn around in the real space. The S3D, by being stuck between this two state (the image and the environ-

8. Wattie J., Card-boarding in Distortion-free close-up stereoscopic photography. Setting the stereo window, nzphoto.tripod.com, <http://nzphoto.tripod.com/stereo/macrostereo/macro3dwindows.htm#cardboard>

ment), not being a true holographic object (detached from any environment unity and recomposing an environment artificially by proliferation) neither being just a single image united, is showing the impossibility of a virtual world to invade the real world. Indeed, the image can actually invade the world by constituting empirically a world of virtual object assembled, losing its status of image and being only a single icon and object. The problem remaining is to know if the hologram would seem that real if it is presenting another temporality. Indeed, how to connect an holographic object animated by the cinematographic process to real space and time? What would be the effect produced by the introduction of an animated object in real space amongst other objects that would not be connected to the same temporal flux? Is it requiring the real space to be empty of other temporal clues?

Even if the S3D is always thought as a pre-holographic era in the image creation, this image has never been so far from being holographic. Indeed, even if the image never felt as much graspable in its entirety as with the S3D, it never has been, on a visual level, that fragmented and full of flat rendering. Let's remember that "holo-" is referring to the entirety or the wholeness and completeness of the thing to the point we can attest and feel the full presence of the object. But in the S3D image, an object (trying to extricate or exit by the front or the rear) is still connected to other elements of the image and deeply linked or attached to the zero plane. It can't flee and escape it because it is still part of an image, a plane and not an object on its own yet, that can have a virtual existence in our own real space. Being between the full holographic object and the pictural environment (or pictural world) the S3D present objects that are still stuck to their status of images because the background or foreground base still exists so are the levels and so are the virtual layers.

The strange thing with actual holography technics is that you would think it is not supposed to have the same cardboarding and flattening because it is not a technology based on stereoscopy but on two or three laser frequency recordings on film that interfere each other when submitted to light, then, produces the depth image. As a result you can turn around on 120 degrees seeing different point of view of it without any transitional "animation" induced by the viewing act which is fusing the images in stere-

oscopy. With the WhiteRabbit technology for example we still have this cardboarding effect[9]. The image is animated by the spectator's movement in front of the holographic picture. Even if the effect is not due to stereoscopy and really animated "live" as such (you can activate 10 seconds of "virtual" animation due to the 1024 frames embedded). This is simply due to the fact that the elements appearing further in the picture's space are animated (or "flipping") at the same speed as the elements on the front when in real life experience the more something is far, the more it is perceived flat, slow and not well defined. Again very paradoxically, to natural perception, this depth image still appears to be flat when it is animated. In all, this kind of holography only works with a static image. Indeed, the perception is establishing depth from diverse information like the time a thing far away takes to reach some point compared to another one nearer. So, you will fail establishing depth from that kind of "animation". The consequence of such a natural habit is that, when watching that kind of picture, you are putting everything at the same distance in spite of their position in space so that any other element's depth information, from every point in space area or view's range, is like crushed and sticking one to the other: you are just receiving contradictory information. Again here, everything is fighting at the same time altogether to be at the front, as much quickly noticeable and viewable, or as much relevant and "animated", depicted. The consequence is a picture full of flatness at the image. It is equivalent to say it is a flat image showing the image of flat worlds. In fact, to create a sensation of realness you would have to map an innumerable amount of plane in the image depth and slow down the farther elements or pixel's switching gradually.

A second point on that technology is there is a lack of reality of the elements' depth because even if your eyes seems to be turning around in the scene sometimes you're never really able to see another face of a tree's base for example[10]. To precise, the image in itself and the shades on things seems so much the same that it is just feeling as if every element was just translating. Plus, everything is turning at the same time in the same direction making no difference if it's near or away. Indeed, for a distant element you should have to do a bigger ellipse to see its different facets. It's a kind of "merry-go-round" experience: you can't really see other

**9.** Avatar Holograms  
- Neytiri with sprite,  
Video, rabbit holes.  
com, <http://www.youtube.com/watch?v=czq3oNVaP1U&feature=related>

**10.** Robotic dog, Video,  
Media room, reald.  
com, <http://reald.com/content/media-room.aspx>

11. How does it work?  
and FAQ, alioscopy.  
com

facets of one thing because you are like moved at the same time; you feel a visual trick. If you feel the space substance so limited it is because you have a very large angle of simulated rotation around things but concretely the things facets are changing so little to the point it's a kind of ridiculous experience. Indeed, the effort to move in space and the lack of result can be compared to a flip book effect where you would take so much images to flip in a row for a very limited animated view in result. So, compared to the lenticular technology used by Alioscopy[11], the image is not that different because each pixel is used as a piece of information even if the laser prints in the pellicle medium permits not to rely on stereoscopy and put more information in the pixel than the sub-pixel scheme. In the end, the rendered effect is not very different in movement especially but a fix image's depth is obviously better when not being reconstructed via stereoscopy. However, even if you are not facing the problem of hyperstereoscopy or carboarding the problem of the transition between two images is still the same through electric waves. Indeed, on one side, you are still to be focus on the very zero plane that creates indirectly the other abstract and unreal planes unmaking the space unity in the picture. The zero plane is always this place of projection in front or rear instead of being a transitional space like others in depth. On the other side, as with the movement in function of the distance we are not supposed to have that much depth information on the things far from us. In fact it would have to change depending of the picture's size and on our position if we are far or near the image. To conclude, being it holography or stereography the recording process and the "flipping" process between frames is still the same and contains the same "carboarding" consequences. As we are not supposed to feel big depth differences between two distant things, when trying to force this depth to appear in the image the reality effect is lost. So the stereo effect always has to play with short depth between one object and another to appear the less false possible even if it is never achieving it.

With holography in spite of all the digital advance and enhancement like the full respect of the colors via 3 RGB lasers[12], the number of pixel (which is printed on film so it can't be a picture on screen like the lenticular led TV but only a fixed image that can only be animated by turning around). More, the

12. Printing digital hologram from computer data, Video, Holographic printer operation, rabbitsholes.com, <http://www.youtube.com/watch?v=tVkj56thgC4>

movement is always and more or less curving and centered on a particular object so the sensation is not of surrounding things but the reverse: you are encircling the space, precisely tracing its limit. Moreover, like S3D, the parallax is always horizontal, never vertical, when our view on space, as the history of painting and drawing shows it is mostly based on the atmospheric perspective, when the view on what's away and far is up and high in the image.

## Conclusion

Through this analysis, a global problem is to be found on the subject of Stereoscopic 3D. Indeed, the whole apparatus is in fact rooted in a kind of animation process where the motion picture seems to take its essence. If you look well, the flipping and fusing process of stereoscopy or holography, the interlacing process of lenticular[13] or the idea to see movement or depth "appearing" by turning around the picture are all forms of animation, activated by the light for holography, by the viewing angle for the stereoscopy for example. The visual jumps between layers of depth or the optical jumps from pairs to another pairs of images in the lenticular process are relevant of the ever incomplete experience on which this experience is based. Differently from cinema or classical animation, a paradoxical problem appears because of the lack of transitional information between two depths as you would experience between two positions with stop motion animation for example. However, here, the effect is not a strange pulse given to forms but a strange space order. This very jump between two depths the vision is experiencing is also a kind of animation. In the end, it is not only the fusing process of the stereoscopy that can be considered as a form of visual animation in the movie experience. Indeed, on another level, the look and the brain is trying to redefine the space continuity through the layering consequences of "cardboarding".

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## THE MYTH OF THE UNCHAINED VIRTUAL CAMERA IN DIGITAL PRODUCTION



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### Abstract

This paper discusses the term virtual camera, which is increasingly applied in all kinds of contemporary digital productions. The authors consider that the term is being misused due to a technofetishism attitude that identifies the tool with its use. They also consider that virtual camera results are not exclusive of computer graphic animation. In this sense, the term is often misread as part of a new paradigm that engages with notions of cinematographic realism and evokes many other Myths of Cinema. The article ends proposing a better understanding of animation terms like animation layout in film theory.

### Keywords

Virtual Camera, Camera Movements, Animation Layout, CGI Techniques, Hybrid Cinema, Technofetishism, Myths of Cinema

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## 1 · Foundations and Birth of the Virtual Camera Term

In recent years and as a result of the progressive integration of the digital techniques, a lot of new terms have arisen to explain the new procedures in audiovisual contemporary production. One of the most accepted concepts relates around the virtual camera, an algorithm based tool in three-dimensional modelling and animation software that simulates the movements and techniques of a physical cinematographic camera in a digital environment. Actually the idea of having a physical camera inside a computer is not new and it can be found in the very first attempts to produce computer graphics (from now on CG) animation. Gene Youngblood, in his seminal text about digital animation [1] already talked about the first experiments at the University of Pennsylvania in 1968, using what it was called “*a conceptual camera*”. This tool reduplicates a cinematographic camera functionality allowing the control for a focal plane, lens angle, panning and zoom actions, fade-outs or double-exposures, just to mention a few available functions. This is the first documented attempt to store “*fifty years of movie making techniques and concepts*” into a computer.

It was not until the 1980s, especially with the progressive penetration of video games as a widespread digital entertainment and the production of computer animation for TV commercials that the first academic researches began to discuss how to interpret, select and frame a three-dimensional space to the audience of digital worlds. Later on, in the 1990s some video games as *Wolfenstein 3D* (id Software, 1992) and *Doom* (id Software, 1993) established the basis for first-person shooters in computer-generated imagery (from now on CGI) games. Both video games used for the first time a subjective camera as a way to ease a better identification to the players. Some scholars [2] also started to realised how these video games were challenging *audiovisual globosphere*, revealing a theoretical need to explain the innovative viewpoint of these virtual worlds gameplay through something related to the cinematographic camera idea, thus the virtual camera.

While this was happening, the first domestic CGI modelling and animation applications appeared on the market. Most of that software soon encountered the necessity to develop a friendly

graphical user interface, keeping in line to major tendencies at that time, inspired by first graphical user interfaces [3]. A common solution in those interfaces was the adoption of pictograms or computer icon that could symbolised any internal software tool. That way, the depiction of the virtual camera tool that allowed to choose any viewpoint and to animate it, took in most of those programmes the iconic representation of a cinematographic camera. This was due to the many correspondences between the digital tool and its physical counterpart, but it also inaugurated a relationship that went beyond its symbolic nature. The chosen icon was inspired in the anachronistic ‘Mitchell Standard’, a 35mm classical Hollywood cinematographic camera with a characteristics two-reel box for holding up celluloid film in the upper part. This icon choice was so successful and almost universally accepted, that it is nowadays the pictogram that identify the camera tool in programmes like *3Ds Max Studio* (Autodesk), *Maya* (Autodesk), *LightWave* (NewTek) or *SketchUp* (Google)<sup>1</sup>.

Interestingly enough, *Super Mario 64* (Nintendo, 1996), a revolutionary CGI platform video game, introduced the three-dimensional camera as an occasionally visible character called Lakitu, which follows the main character as a camera operator. The camera that Lakitu holds also seems very similar to a Mitchell Standard one, and it was introduced to allow an easier transition of two-dimensional, flat video games into three-dimensional worlds [4]. *Super Mario 64* necessity for clarity and readiness in a new gameplay environment turned momentary the virtual camera into an active entity next to the main avatar controlled by the player, a novelty in video games history that would be rare in the future.

As the decade evolved and digital animation started being used massively in many Hollywood blockbusters, film scholars also began to assume the pretending benefits of replacing physical cameras for virtual ones in digital productions (see [5] and [6]). In fact, early commentators soon understood that the capabilities of virtual cameras extended beyond video cameras and cinematographic cameras because those were “*relatively large, heavy, cumbersome objects with severely constrained movement and adjustment possibilities. They cannot fit through very narrow openings or pass through solid objects or move at high speed or accelerate*

<sup>1</sup>. Not in Blender (Blender Foundation), where the virtual camera is true to its virtual nature and it is represented by a single point.

*and decelerate very rapidly or (usually) fly through the air. This gives live-action video and movie film a very characteristic look. But virtual cameras are dimensionless, weightless points with unlimited freedom of movement. (...) There is no need to move and adjust a virtual camera in traditional patterns: computer-generated animations can have a completely different look” [7].* What is connoted here was the idea that virtual cameras did not need to share the main features of cinematographic cameras or video cameras, because their audiovisual codes were different at that time. Virtual cameras were here regarded as a promising tool, one that seems able to change the film language. However, Hollywood filmmaking would soon avoid such an approach to virtual cameras, minimizing its radically different nature and opting rather for much more traditional patterns, apt to be applied to narrative storylines.

Before dealing with these questions, we would like to recall now the main differences between virtual cameras and physical ones. As we cited previously, a virtual camera is a single and immaterial mathematical point, set to display a viewpoint in a three-dimensional environment through a computational rendering process. The immaterial nature of this viewpoint neutralised all the disadvantages that a physical camera possesses. For instance, a virtual camera does not need to be carried or transported; it does not weight anything nor does it make any noise; there is no need to adapt, change or buy any of the photographic devices, such as lenses, filters, shutters, iris, or film stock, in a virtual camera; and it does not get affected by physical forces, as gravity, speed or inertia. Virtual cameras only depend, if at all, on the computer hardware where it runs on. However, this apparent perfection leads it to a dead end. As Nitsche precisely points out: *“Without [physical] features, virtual cameras lack an important incentive for artistic development: the creative encounter with the limitations of the technology” [4].*

Here one should be cautious enough before considering that technology behind virtual cameras could have managed to fulfil already its own limits. There are no way of knowing if the virtual camera tool will remain as it is now for many years on or if it will change its procedures soon; the truth is that aside from further technology improvements, the workings of virtual cameras has remained practically identical since its creation. And what is more

important, virtual cameras seemed to have reached and exceeded their analogical equivalents in terms of quality and display long ago, and therefore there should not be rush to improve this technology; until this moment arrives, these tool does not need to change its way of working.

However, this does not mean that its praxis and uses have not had changed since its creation. More recently it can be detected a progressive trend to hide its features of digital perfection. Through a plethora of software add-ons and render effects, many film productions try to emulate all kinds of camera and operator imperfections, such as lens distortions, lights reflections, camera vibrations and other visual interferences. For example, matchmoving applications take into account camera shakes as a basic step before starting with the tracking features process [8].

The proliferation of virtual cameras in contemporary film productions have made audiences more aware of watching through devices that do not physically exist. Along with Quintana's opinion, one can also argue that, although technology constantly provides of higher quality levels in terms of crisp images, the arrival of digital phone cameras and poor Internet files resolution has revitalized the perception of low quality images as trustworthy and both are considered now reliable sources of information. Some authors argued that *“it is paradoxical that the new technologies are responsible for so many low quality images and sequences. (...) Television has brought the non-professional medium to an iconical idealization of how a war in the twentieth-first century should be filmed”*<sup>2</sup> [9].

Recent hybrids movies like Cloverfield (Matt Reeves, 2008) or District 9 (Neill Blomkamp, 2009), with a shared common interest of blending hand-held camera techniques with state-of-the-art CGI animation, show how the virtual camera was in all those years conditioned and affected by French “New Wave” teachings, the more contemporary “Dogme 95” Manifesto or even by films like The Blair Witch Project (Daniel Myrick, Eduardo Sánchez, 2000). One can find in all those films a wide range of faked image imperfections that imitate low quality video from hand-held phone cameras, adding plausibility to the movies through the erase of their digital traces. This trend of digital film to imperfection can also be found in many first-person shooters

<sup>2</sup>. Translated by the authors.



like *Call of Duty: Modern Warfare 2* (Infinity Ward, 2009) or in a more subtle way in many contemporary CGI animated short films. In an audiovisual world increasingly saturated of digital perfection, filmmakers have realised that, if they still want to attach to a pretended realism, it is necessary to keep away from most of the virtual camera features.

## 2 · Different Uses of the Free-Flowing Camera in Live-Action Productions

We will discuss below how some scholars have begun to use this concept also for hybrid motion pictures, especially in Hollywood big budget movies that fuse real footage with CGI elements like background scenery, animated actors or digital special effects, as it happened in *Cloverfield* and *District 9*. An accurate blending of such heterogeneous elements, like a perfect integration between live and digital actors, seems to be crucial in such these movies. In all these cases, camera tracking operations are also vital to get a smooth transition between materials. Techno-fetishism has become a constant element in film review where movie critics and technical professionals highly praise film sequences that merge in the most perfectly way digital and real elements, and it is usually considered the highest accomplishment when an unaccustomed eye is not able to distinguish what was registered and what digitally produced [10]. As the integration of digital animated production became a common practice, virtual cameras went to enlarge the increasingly vast array of digital cinematic tools.

There are countless sequences where the presence of a virtual camera is evident, because they reinforce a sense of weightlessness that is perceived as non-natural by the audience. Verticality has also been identified as a hallmark in productions with an extensive use of digital special effects [11]. These movies, with their recurrent mix of fully packed action and martial arts along with science-fiction and fantasy plots, constitute the perfect ground for virtual cameras, as they can easily navigate through these vertical spaces without any technical worries. Consequently, the more virtual cameras were used, the more special effects movies incorporated them. This should not lead to think that the virtual camera stays behind any special effects scene, or that these kinds of scenes are the only field where they may appear. Virtual camera

as part of the digital palette can mark its presence with pompous and gratuitous change of perspective, but it also may remain unnoticed if necessary. It must be stressed, however, that a pure use of the virtual camera in those hybrid productions is also rare. A typical virtual camera sequence has either real actors or animated characters, sometimes both, interacting on digital or real environments. In any case, the registered image and the rendered one collide at some point, producing a final picture that contains elements from both sources.

American director David Fincher is well known for his auteurist integration of CGI scenery with live actors and his filmography includes plenty of astonished camera movements. Film scholar Mike Jones cited in his research about virtual camera [12] two sequences from Fincher's *Fight Club* (1999) and *Panic Room* (2002) that in his opinion represented two different ways of using a virtual camera inside a Hollywood movie, two options that oppose themselves: telling (narration) to showing (mimesis). Jones suggests that the virtual camera can propose "*an engagement that is derived from a mimetic discourse of the virtual non-diegetic camera*", conducting to a "*shift in cinematic awareness of experience, whereby we move from a position of cinema as a scenic/spatial simulation of the abstracted 'eye' to a fundamentally new conceptualization that is, in essence, an emulation of a spatially abstracted 'I'*".

As we have stated previously, rendered frames from a virtual camera tend to dilute after blending with live registered footage. Once both materials are together, there are no reasons to understand them separately, as they do not act in a pure form. This can be appreciated in a particular *Panic Room* scene. In that sequence the viewpoint goes back and forth through the objects and house rooms, while a group of burglars try to force the lockers, finally breaking into the house and running upstairs in silence. The artificial nature of this free-flowing camera movement, obtained after rendering a digitally hyperrealistic background, contrasts with the ominous presence of the burglars, performed by live actors and consequently registered on stage. Both materials, the registered live action and the rendered one, integrate seamlessly in a new hybrid picture, where no longer one source prevails over the other one. In some point, Jones considers that this scene "can be viewed as a point-of-view shot from the perspective of the house and its

holistic internal space. (...) [This] becomes an act of ‘seeing what the space sees’ rather than what the characters can or might see.” There are many valuable aspects in this argumentation though, but we think that this act of ‘seeing what the space sees’ does not imply the rejection of the narrative capability of the virtual camera tool, as the author suggests. In fact there is a considerable presence of diegetic elements in both of Fincher’s mentioned scenes. For us there is no such divorce between ‘mimesis’ (virtual cameras) and ‘diegesis’ (physical cameras) as Jones upholds, because trying to identify digital from analogic sources in the context of a hybrid scene becomes just a relevant task for its analysis but not for the reception and, thus, the production of meaning. However, we will finish this intriguing question here because otherwise it would lead us astray from our main subject.

### 3 · Subjective Long-Takes in Digital and Hand-Drawn Animation

For the aim of this essay, we will recap the virtual camera conceptions in Jones’ article because we think they reveal a widespread opinion about this digital device that also applies to other digital techniques used in live-action movies. After considering the virtual camera a digital tool that has been able to surpass the long-take cinematographic technique “by its very nature of physical intangibility, (...) rooted in a depiction of fantasy and the impossible”, Jones asked himself if this new device could be “part of a natural evolution of optical emulation” or does it “represent a shift more fundamental to our perception of both cinematic form and our place as viewers, observers and occupiers of cinematic space”. What seems more relevant to us is the invocation here of terms like evolution or shift in cinematographic perception, which are not exempt of contradiction. Although it is true that both the virtual camera and the photographic one share a conceptual and terminological paradigm, there are enough differences –physical but also aesthetical and philosophical- to show discrepancy with Jones’ arguments. Moreover, while identifying a well-known film technique as the long take with a digital tool like the virtual camera may be seen as problematic because it should be understood neither as a cinematographic style nor as a film technique, this argument fits pretty well, as we will see later, with some film

theory trends that consider the use of technology in audiovisual and media production an unavoidable step for the progression of visual culture.

It is true that many of the early computer-animation experiments assume in most cases the form of erratic long camera movements. *Vol Libre* (Loren Carpenter, 1980) and the Genesis sequence from *Star Trek II: the Wrath of Khan* (Nicholas Meyer, 1982), just to cite two of the most known pioneer computer animations, largely based their mise-en-scène in long camera movements. Factors that may explain the frequent utilization of long camera shots include previous computer animation experiences with flight simulators, the absence of strong cinematic conventions by the engineers responsible for the animation and the emphasis put on technological purposes more than in artistic criteria. But even in early animation, it clearly appears that the long-take does not constitute the main cinematic technique, although it is one of the most eye-catching. For instance, a short film like *Megacycles* (John Amanatides, Don P. Mitchell, 1989) is built solely upon static shots in different scales and angulations, while *Quest: A Long Ray’s Journey Into Light* (Michael Sciulli, Melissa White, 1985) uses a wide range of cinematography conventions, from different shot frames to camera movements of any kind, that shows off a more conscious attitude to the medium. In any case, as soon as filmmakers began to get interested in computer animation, they developed a strong determination to incorporate narrative models into this new animation technique. Craig Good, Pixar layout supervisor in transcendental *Toy Story* film (John Lasseter, 1995) believes that:

“In CG you can move the camera wherever you want, you can do whatever the hell you want with it, it can fly everywhere, it can zoom it and out. A lot of people were doing that kind of thing early on because they could -and because they didn’t have any discipline and they didn’t have any education in how to move a camera and they hadn’t thought about it. So in a lot of early CG that we remember you got motion sick because the camera was just flying around everywhere. (...) It was a conscious decision on ‘Toy Story’ to use very standard film or camera ‘grammar’. I knew that the movie was going to look new and somewhat strange to the audience, so we thought, ‘Let’s at least have them grounded in the kinds of shots they’re

*used to seeing'. So we did very few fancy camera moves"* [13].

Good's statement makes clear enough how soon the urgency to narration strove for more conservative compositional principles than the ones used until then. Toy Story not only inaugurated computer animation as a feasible technique for feature films, it also defined the film style that other computer animation movies would follow massively from that moment on. Although it is not our intention to discuss here the principles that inform film style in CGI animation because it extends beyond the main purpose of this article, we would like to stress that from that moment CGI animation would limit previous cinematography excesses, especially what Good described as "camera sick".

One of the main reasons to explain this particular phobia to unmotivated camera movements is that they threaten directly the story readiness. John Lasseter, head of Pixar Animation Studios, has openly praised many times the advantages of using Disney hand-drawn animation principles in computer graphics animation. [14] These principles were conceived during the 1930s by Disney animators to emphasize credibility and empathy into the film characters. But Disney animators did not follow these principles as a set of rigid rules; actually, they normally opted to get them in mixed combinations to reach the "illusion of life", a film style that highly focused on obtaining realistic characters and that worked as a translation of classical film style to hand-drawn animation. Consequently, after Toy Story's success, CG animation dismissed experimentation and began to rely heavily on animation principles and character-driven storytelling. Hence, unmotivated camera movements that do support neither character construction nor storytelling were removed in further Hollywood CG animation feature films. Prior to this, early attempts to incorporate computer graphics into animation did not deny this voyeuristic side of the virtual camera technique. As an example, it could be useful to remind the achievements of CAPS (Computer Animation Production System), the innovative proprietary software developed by The Walt Disney Company in the late 1980s. This software was mainly conceived to allow the digitalization of the ink and paint process, but this also opened the door to more complex digital multiplane shots, with extensive in-depth and circular camera movements that were not possible with analogue

multiplane cameras until then. Some sequences of films like *The Rescuers Down Under* (Hendel Butoy, Mike Gabriel, 1990), *Beauty and the Beast* (Gary Trousdale, Kirk Wise, 1991), *Aladdin* (Ron Clements, John Musker, 1992) or *The Lion King* (Roger Allers, Rob Minkoff, 1994), all released before Toy Story, made use of long-take shots with the camera moving around the space that immediately captured the attention of the audience because they added a sense of depth in hand-drawn animation that was pretty uncommon at that time. CAPS systems kept producing these kinds of multiplane shots until its dismantling in 2005, but they lacked the strength they got in the past because CG animation could build more easily the sense of depth.

We have commented before that in-depth and circular camera movements were rare in hand-drawn animation until the arrival of digital technology; but this does not mean that they did not exist at all. There are many examples in animation history that show a sustained effort to go beyond depth limitations of hand-drawn animation. Just to cite a few, *The Powers of Ten* (Charles Eames, Ray Eames, 1977), *Tezuka's Jumping* (1984) or Rofusz's *A Légy* (1980) are all visual-breaking hand-drawn short films, that attempt to break the traditional flatness of the technique. They are set out as cinematographic long-take shots that move back and forth on subjective perspective, only adding a feature that is unique to animation: its capability to ignore laws of physics. This is most evident in *Jumping*, where the spectator adopts the subjective perspective of a child in successive higher jumps. With every jump, more powerful than the previous one, the change of perspective also speeds up, making the whole landscape elements vary each time faster. However, *Tezuka's* cartoony style is not an inconvenience to depict these series of jumps in a realistic way. In spite of the intense change of the viewpoint, this is always displayed from a corrected perspective. Similarly, *A Légy's* perspective reveals a more photographic nature, as this short film depicts the hand-drawn picture imitating the ultra-wide-angle or fish-eye lens. In the other hand *The Powers of Ten* shows an extraordinary travelling where the camera viewpoint doubles every second its distance. So, in short time, the camera viewpoint goes from a group of people in high angle to travel far away to show the Earth and the Milky Way in few seconds. After decelerating to

zero, camera travels its way back to the Earth, doubling again its distance until it reaches human cells and the atoms.

Although it seems that documentaries dislike animation, it is in fact a really appreciated technique in science documentary like in *The Powers of Ten*, due to animation ability to expose abstract theories or physical actions that could not easily get registered with a photographic device. CGI has just made this interaction even lighter, as it can be seen in two modern scientific documentaries series like *Wonders of the Solar System* (Brian Cox, 2010) and *Inside the Human Body* (Michael Mosley, Nat Sharman, Alice Harper, 2011). Both documentary series use CG animation to bring further the premises of *The Power of Ten*, and interestingly enough, they do not seem to follow the same strict visual codes that operate in commercial CG animation films, as the camera is constantly evolving, moving and reframing in unusual compositions. Documentary shots can avoid the aforementioned classical narrative film restrictions that apply to the mise-en-scène, simply because they rely on the informative condition of the image to display them. Long-takes shots are frequent in both series, because they are suitable to travel into the open space or to show a meal going through the human inners.

#### 4 • Animation as Part of the Film Vocabulary

As we have tried to argue until now, the ‘virtual camera’ term has often been misused and misunderstood in recent research. On the one hand, the idea of a ‘virtual camera’ should in the beginning only refer to the mathematical device that allowed a computer graphics programs to change and render a given perspective inside a three-dimensional environment, but due to its many similarities, it was soon connoted with a cinematographic camera icon. This started an unstoppable process that brought some scholars to identify the tool as a technological advanced photographic device, and lastly, as a new element on film grammar, which intended to be a more powerful version of the long-take shot. There are many fallacies in this argument that need to be precisely separated.

First of all, it must be understood that this kind of omnipotent long-take, able to assume any viewpoint without physical restrictions, is neither an exclusive feature of the virtual camera nor of

CGI animation, but of animation itself. Short films like *Jumping* or *The Power of Ten* prove that there is no cinematic technique able to depict such succession of spaces while defying laws of physics other than animation.

On the other hand, CG programs have no other way to render its visual information than through these virtual cameras, the same way as reality cannot be registered without camera intervention. Nevertheless, no one would dare to identify nowadays the cinematography apparatus with a cinematic technique, with a concrete portion of film grammar or even with a specific film style, like the classical film style. There are no reasons to think that this should be different when talking of virtual camera and CGI animation. In fact, misidentifications between film technology and its potential use have been a traditional cul-de-sac in film theory history.

Starting with Canudo’s “The Birth of Sixth Art” manifesto, where cinema should be regarded as a synthesis of all the previous arts [15] or André Bazin’s “Myth of Total Cinema” [16], there have been uncountable myths that have tried to impose a particular sense on the cinematograph technology. One can observe how with every major technological innovation, from sound cinema to cinemascope or stereoscopic projection system, film theory have been literally flooded with countless arguments that praised the pretending virtues of every single new innovation. Most of these confrontational arguments often become dated in a short time but this does not prevent the periodical revival and feedback on these arguments with every turn of film technologies. One of the most famous of these arguments was Bazin’s article “*The Evolution of the Language of Cinema*” [16], where he distinguishes between directors who “*put their faith in the image*” and those “*who put their faith in reality*”. This separation between “realism” and “fantasy” explicitly engages with current discussions on hybrid digital movies that use CG animation. For example, many authors (see Negroponte [17], Lévy [18] or Quéau [19]) have tried to see in CGI technologies a teleological component for the cinematography redemption. These techno-fetishism, expressed by La Ferla as the “tyranny of newness” [20], should not divert attention from the fact that CGI is nothing more than a device able to produce computer animation; however, there is nothing in CGI technology

that prevents its use in other way. Trying to disclose a meaning of virtual cameras use is nonsense, because they do not have any at all; it is just a sign without significance. Virtual cameras can depict spaces in a manner that physical cinematographic cameras do not, without attaching to any film style. And given the fact that there are no significant differences in how the picture is displayed between CG animation and other techniques like hand-drawn animation, it can be concluded then that the virtual camera term should exclusively refer the computational feature installed in a 3D rendering software, and not the compositional or stylistic functions that from it derives.

But it is true that without this term there are some terminological troubles to explain what produces this combination of CGI and registered live-action footage, especially when the limits between sources are finely blurred and it is not possible to identify them separately. This question complicates even more if it is considered that there are many different technical solutions that can be added into the final compounded picture. Some, like the motion capture technique, have an even much more complicated cycle that goes from analogic field into digital one before mixing with other elements.

That terminological gap only fixes if one takes into account the terms that have been in use in hand-drawn animation for decades, which now also keep being used in the CGI process. Modern film scholars of the digital realm should put more attention into the process of animation layout, a complex and sometimes confusing task that involves a related set of skills, including cinematography planning, compositional work and lighting. In MacLean's words, layout could be described as *"the marriage of storytelling and composition; it is the art of placing moving storytelling images within a frame so that they can unfold before us in real time (...) the art of setting everything -the characters, the environments, and the camera - in motion by providing a context and a visual continuity within which everything can move freely and legibly"* [21].

## 5 • Conclusion

Layout construction is probably one of the most underrated film study fields, even in animation research, but it has an undeniable role as a fundamental step in any animation production. Follow-

ing MacLean's text: *"One or two of the artists working in layout for contemporary computer graphics animation studios told me that, in their experience, 'layout' was synonymous with 'camera' (in the contemporary sense of deciding on the position and movement of a virtual camera); others were keen to assure me that the definition of 'layout' in CG animation studio was closer to what a traditional animation studio would, until recently, have referred to as 'scene planning'"*.

As seen here, layout implies a wide range of conceptions and interpretations, but this should not be an inconvenience to confront it as a feasible and powerful way to better understand what happens when CGI animation and live action footage blend together in one picture. Animation is an extremely open array of techniques where heterogeneous artistic solutions overlap. Thus, in order to understand more clearly how CGI-saturated live-action movies work, we propose to begin sticking more closely to notions already existing in the animation layout process.

Film scholars have finally begun to become interested in animation as an integral part of the film studies, but there is still a lot of work to do. On the other hand, animation theory has focused too much on itself, avoiding by and large crossing discipline boundaries and therefore increasing their sense of isolation. We consider that contemporary film practices like CGI use in live action films and their progressive mixing of tools and visual solutions will oblige both fields to share more and more vocabulary and tools. Only if film vocabulary starts including animation as a fundamental part of its language, it will conduct to a better understanding of contemporary filmmaking, avoiding future incidental misuse of terms like the virtual camera.

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# MUSERT

3D virtual museum immersible and with  
Content personalized recommendation



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## Abstract

Virtual environments in three dimensions (3D) experiments provide a wealth of detail, sense of immersion and interaction with various features. A virtual museum, from its 3D virtual platform and the resources it can offer, works as an efficient educational tool as it provides information to its visitors in a simplified and easy to understand. However, a limitation of the use of virtual museums for learning is that these environments do not take into account the individual and contextual characteristics of each visitor, considerably limiting their learning experience and navigation. Based on this, this paper presents a 3D virtual museum named Musert, whose differential recommendation personalized of content. To achieve this goal, we used a combination of technologies, and its development has been divided into two distinct steps, the modeling step and recommendation step. In step modeling was used the Blender tool for modeling the museum and its pieces, together with the X3D standard and the Xj3D browser to promote the availability of content on the web. In step personalized content recommendation, was used intelligent agents, techniques of content recommendation and ontologies for perform satisfactorily the recommendation, and therefore, taking into consideration needs of each user.

## Keywords

3D virtual museum,  
recommendation  
personalized of content,  
intelligent agents and  
recommendations  
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## 1 • Introduction

The dissemination and preservation of historical and cultural heritage are essential to education and contributes meaningfully in the cultural identity definition of a region. However, despite relevance, a series of artifacts and documents with great historical value has been lost over time due to lack of preservation mechanisms related to technological advances. This brings on immeasurable damages caused by many factors, such as: time, handling and improper storage. Therefore, it is constantly increasing the searching for alternatives that would preserve the cultural identity of a region. One such alternative is the use of digitization techniques in three dimensions (3D) on projects with great visual appeal. The 3D digitization can be used to preserve in a safe manner the property of historical and cultural heritage in every detail, allowing the construction of replicas, even when the original is no longer available, as well as the creation of virtual collections available over the Internet [1].

Nowadays, the use of 3D content is increasingly common in (VLE), virtual learning environments, because it offers the sense of immersion and visual resources availability. Due to the wealth of details, the 3D digitization techniques provide an amount of information that virtual environments can offer in many situations. But the users are unable to identify their real needs for information acquisition in case of a large amount of data provided [2]. One alternative to solve this problem is the storage of user profile, which can be performed with ontologies and the dynamic profile updating, which can be done by intelligent agents. The use of ontologies becomes attractive because it allows a better understanding of the data by computers, offering a greater accuracy in results that are sent back [3]. In addition, due to the manner in knowledge representation, ontologies allow an efficient communication among people, software agents and systems [4].

This paper presents an VLE in a virtual museum form named Musert, where intelligent agents have as a purpose, performing inferences in ontologies and the customized content recommendation taking into account the characteristics of the visitors' profiles, in addition to monitor their activities in the virtual environment.

This paper is structured as follows. In section 2, presents an

overview of related works. Already in section 3, presents concepts related to virtual learning environments in 3D. In section 4 presents concepts of software agents, multiagent systems and more specifically, intelligent agents with pedagogical features. In section 5 presents benefits of utilization ontologies and explains how operates the content recommendation systems. After that, presents the approach proposed on this paper that is a museum virtual in 3D with personalized content recommendation. Finally, in section 7, presents some conclusions and motivations for future works.

## 2 • Related Work

The proposal of using VLEs that use 3D resources has as main goal, add an wealth of details in the content presentation to users. Exemplifying this, one of the related works presents a virtual museum that has a proposal of preservation of historical artifacts through use of multimedia resources. To do this, it uses the digital narration of content displayed, also using virtual reality techniques and taking into account information of users and trustees to improve the visualization of the items [5].

In [6], is presented an immersive virtual museum, interactive and itinerant named 3I Museum. This museum has as a differential, the possibility of the visitors choose which pieces of collection want to visit. Another important factor is the possibility of any person being a trustee of the museum, this person could send an item to the museum collection via the Xj3D browser. This item should be three-dimensional and modeled obeying the standard X3D, which is already native of the application. In addition, the museum offers a 3D graphical interface and at the same time, menus are presented in order to the visitors can select the features that most interest them.

The work presented by [7], has the goal of developing an interactive virtual museum that uses virtual reality techniques. This museum had as principle motivating the use as a teaching-learning resource working outside of the classroom in order to solve the lack of time. For this reason, the museum has instructors that support and encourage students to build knowledge actively through self-study activities. The students can access the museum using an avatar. In each exhibition hall of the museum, there are



different kinds of activities, along with relevant information. The survey results revealed that the students who visited the virtual reality museum on the internet showed interest and enthusiasm in learning more. In addition, the students had more time to gain more experience outside of classroom and to learn according to their preferences. It was also found that the most students were satisfied with the virtual reality resources available. For validating purposes, a study was carried out in a group with sampling of 80 students.

Therefore, this work gathers the main characteristics of the works mentioned above. However, it differs from the others relating to the fact that, it uses a multiagent system, working with ontologies in order to improve the content recommendation with educational characteristics through a virtual museum platform.

### 3 · Virtual Learning Environments

VLEs can be conceptualized as software systems that facilitate the individual or collective learning processes using electronic media. They need basically of internet, which provides a lot of management functions, such as educational material management, in addition to monitoring and evaluation of the student learning [8].

#### 3.1 · 3D Virtual Learning Environments

The Creation of 3D virtual environments representing VLEs, allows uses of endless possibilities for creation of environments that cannot exist physically, or for some restriction, may not provide all wanted resources physically. Thereby, 3D VLEs allow the emergence of many innovative ideas for the characters construction (avatars) and building architectural designs with educational purposes. In addition, the lack of physical restrictions in the development of this kind of environment is quite significant regarding to the difficulties found in the real environment constructions. In 3D VLEs there are no restrictions of real life, such as: budget limitations, soil tests, material limitations, infrastructure requirements, sound or even the gravity. Thus, a simple 3D procedure for instance, may transform and excite the colors of aged walls and enrich sad architectural styles [9].

#### 3.2 · Virtual Museums

A virtual museum can be characterized as an electronic artifacts collection and information resources available in digital format. One of the advantages that a virtual museum can present in relation to traditional ones, is the digital reproduction of a real object that still existing or not, offers the possibility to observe and interact with the works of art belonging to the virtual museum, which are located in another physical place [10]. Another advantage is the possibility to provide many multimedia resources, such as: texts, data, graphics and animation resources, improving even more a visit to the virtual environment [11].

A virtual museum, from the use of technologies for virtual reality along with all other resources, works as an efficient educational tool, because it provides information to users that is simple and easily understood [12].

Even in the face of many resources, researchers concluded that a VLE cannot replace the interaction between student and teacher. A problem that occurs in the most of VLEs, it is because the content is passed to all students in the same way and it does not change according to their needs. Thus, in recent years, researchers have attempted to modify this passive behavior and presented a series of practices and innovative technologies to reach a new generation of VLEs, where it is possible to have skills of real interactivity and participation in the learning process [8] [13]. Thus, this work presents an alternative so the content recommendation be performed in a satisfactory manner.

#### 4 · Software Agents

Software Agents are entities characterized by being autonomous, proactive and targeted to achieve a goal. An agent, to be considered intelligent, it has to select for each sequence of possible perceptions an action that is expected to maximize its measure of performance, given the evidence supplied by the sequence of perceptions and by any internal knowledge of the agent [14].

Thus, intelligent agents can perform many tasks in an AVA, such as the monitoring of user activities, capture automatically the dynamic context information, such as the preference for a particular of content kind and frequency of use of resources, in addition to carry out a customized recommendation of educational content [15].

### 4.1 · Intelligent Agents with Pedagogical Approaches

Intelligent agents with pedagogical goals (IAPG), besides the characteristics of a conventional agent, it is focusing in achieve goals that improve the learning of the VLEs' users. Due to that, the IAPGs have been used as tutors, using cognitive models of users, for provide a greater support for customized learning. They have also been used as a mechanism to provide emotional support. Thus, these agents provide increasingly engagement and motivation in environments electronics learning [16].

Nowadays, there is an important effort in applying of IAPGs in learning traditional environments. This occurs mainly due to the potential of these agents in providing a learning experience with great wealth of resources besides the exploration of the agents with social skills, which can provide many learning scenarios useful for collaboration in a VLE [17].

### 4.2 · Multiagent Systems

There are many concepts that define a multiagent system. One of them defines that an multiagent system is a computer system in which two or more agents interact or work together in order to carry out certain tasks or meet a set of goals [18]. Each agent is basically an element able to solve problems independently and cooperates with other agents [19]. In summary, in a multiagent system, the agents that compose work together to achieve a main goal or individual goals related. In this way, there is the need for interaction among different agents to achieve their own goals. The main motivation for use multiagent systems is related to the scale of the problem, which may be large enough so that it cannot be solved by a single agent. In addition, they provide a natural solution to geographical problems or functionally distributed [19]. Another feature, which is also relevant to this work, is the ability to provide greater clarity and conceptual simplicity to the project.

5 Ontologies and Techniques of Content Recommendation  
Ontology as a computing artifact, describes a domain with a specific vocabulary, using a set of inferences about the intended meanings of existing terms in this vocabulary [20]. The main benefit an ontology is the possibility of communication among people, agents and systems. Since it allows the reuse, the formal

representation of concepts and the knowledge sharing [21]. With the advances in semantic web and the use of ontologies, problems such as: storage, organization, sharing and reuse of information efficiently can be overcome. Using ontologies to describe learning objects, enables different educational applications, sharing and reuse of the same educational content. In addition, the reading ability oan ontology by computers increases the access speed to the shared information and the accuracy of the results sent back [3].

### 4.2 · Use of Ontologies in Learning Environments

Ontologies can be used to achieve many goals in VLEs, being the customizing, one of the main applications, for this, uses specific characteristics of each user's profile [22].

Some studies suggest a customizing of content based on ontologies. The main idea of this approach is identifying the user requirements that in other words, identifies their preferences and characteristics, and create a model of this user. This model should contain the knowledge expressed through a set of terms belonging to a common ontology, allowing adapts the content individually [23].

### 4.2 · Recommendation Systems

Nowadays, there is an exponential growth of data sources and this fact makes the acquisition of knowledge to be increasingly complicated due to the difficulty that users have in identify their real information needs. Given this, it is increasingly common the use of Recommendation Systems of (RS), but to achieve their goals, they use different techniques and strategies for the recommendation be performed in an appropriate manner to each user, using information contained in the profile [2] [24].

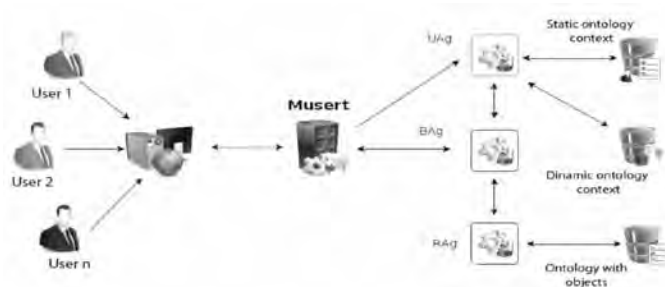
Generically, the RSs are divided into three categories: Collaborative Recommendation Systems (CRS), which conduct the recommendation process taking into account the preference similarities in a users' group. Recommendation Systems Based on Content (RSBC), which seek the objects suitability to be recommended regarding the information of user profile. And, Hybrid Recommendation Systems (HRS), which seeks through specific techniques, merges these techniques used by CRSs and RSBCs

[24]. Many RSs use hybrid approaches to combine methods based on content and collaborative approach, intending to eliminate certain limitations that these approaches may present when are used separately [25].

## 6 • Musert

Due to the greater visual appeal and the immersion sense, the learning environments that use 3D techniques have created new possibilities for learning scenarios that weren't possible before [26]. Taking into account these characteristics, this work presents an approach based on IAPGs to carry out the customized content recommendation in a virtual museum named Musert. The architecture of the proposed VLEs can be seen in Figure 1.

**F1.** Environment architecture proposed



Before that, however, the visitor needs to make a cadastre with your personal characteristics that are stored in the ontology of static context, which contains information such as name, age and scholarity. Besides this ontology, there is also the ontology of dynamic context, which is responsible for storing information such as number of visits, visited pieces, among other information of dynamic character representing the visitor interaction with the virtual environment. The following subsections describe the agents shown in Figure 1, the recommendation based on ontologies and implementation aspects of the system.

### 6.1 • Modeling Step

The three-dimensional modeling of the museum was designed as the first activity to be executed, followed immediately by modeling the pieces that composes the museum. For this, it was

used the Blender tool, which is a free and open source software for 3D modeling, and it has exporter for X3D standard, which is an open standard for distributing 3D content on the Web. As the museum will be available on the Internet and because of amount of the load data, modeling was optimized at a level so that the graphic quality of the virtual environment does not impede the use of the museum. Thus, it has been used textures with data size minimized, but promoting an environment realistic appearance. Additionally, were used techniques to avoid unnecessary code replication, and consequently increase the transmission speed via Internet of three-dimensional models. In the development of part of the application that is available to the user, been used the language Java with the Xj3D browser, in order to obtain a viewer instance and incorporating it to the graphical interface [12].

**F2.** Blender tool and museum piece in modeling stage



In this regard, as a result, have the museum modeling and a great part of existing pieces in the original museum. In addition, in order to provide a better use and familiarity with the environment, were used objects which often composes a royal museum such as: walls and floors with royal textures, staircase, art sculptures and stylized columns. A museum view is shown in Figure 3. In addition, tests were performed for navigation in the virtual environment to prove the proposal effectiveness. The results showed that the environment has all features desired by the project.

**F3.** External view of the museum developed



## 6.2 · Software Agents

This approach implements three agents: Browsing Agent (BAG), User Agent (UAG) and Recommender Agent (RAG). Each agent has specific purposes that are related in order to achieve the main goal that is the recommendation personalized of content. The BAG has a direct relationship with the proximity sensors present in the whole museum, mainly on the pieces. Where the visitor approaching to an piece, the sensor communicates with the agent that recognizes the visitor's intention to obtain information about the piece. After that, the BAG manages the content availability along with other agents.

The UAG is in charge to monitor the user's activities and retrieve the content preferences of visitor's profiles from the ontologies of static and dynamic context according to their respective historical the pieces that were visited. Based on the history of visits, the UAG can check the profile of other visitors who have historical similar preferences. The UAGs also capture the information the dynamic context the user. For this reason, the UAG performs an action at the moment in which the student is log in the application. Then, all these information are sent to the RAG.

The RAG is aiming detect the items description that are suitable to student profile according to information provided by UAG and by the information about the museum collection acquired from the ontology the pieces description. Thus, Initially, the RAG finds the description that it would be more suitable according to visitor profile. Then, based on this information, the RAG checks the amount of visits which the user has done to that item, also checks the amount of visits to the museum customizing this way the experience level. Thus, the accuracy rate during the recommendation of the items description which were visited tends to increase.

## 6.3 · Used Technologies

The agents presented in this work were developed using the Java Agent Development Framework (JADE), which consists in a complete platform for development and implementation of multiagent systems. It was also used the Blender modeling tool, which is a free and open source software for 3D modeling and it has exporter for the X3D standard, which is an open standard for

distributing 3D content on the Web. In the development of the application graphical interface, i.e. the visible part to the user, it was used the Java language with the Xj3D browser, to obtain the viewer instance and incorporating it to the graphical interface. As the museum will be available on the Internet and because of the data transfer, the modeling has been optimized in a level that the graphical quality of the virtual environment so as to not render the museum use [12].

The agents presented in this paper were developed using the JADE (Java Agent Development Framework), which is a software development framework fully implemented in Java language for the development of multiagent systems. Provides a set of technical resources for the development of multiagent systems that tooth they have become the platform of distributed agents facilitated management of agents, communication between agents with messaging. The communication of agents to send and receive messages. Each agent has received a message box. Furthermore, it offers the possibility of filtering messages by using advanced filters in relation to different fields of the received message [27].

## 7 · Final Thoughts

Was presented in this paper an implementation based on agents for content recommendation in a 3D virtual museum. The proposed solution aims at making the learning more suitable, starting from the visits to the museum in relation to the visitor needs. As future work, we intend to submit the environment developed for an assessment of a museologist, in order to the application has a better approach regarding the content aspect of the items recommended. In addition, the aim is measuring how much the approach is accurate in the recommendation execution under the effectiveness aspect to the teaching-learning process. To that end, we intend to carry out a case study with a group of a distance education course so as to check the impact of the proposed approach in the content suitability.

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# COMMUNICATION DESIGN AND CULTURAL TERRORISM

Using our skills to breath life into what hides in the shadows



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## Abstract

This paper considers how communication designers can use their creative skills to engage in art making that is both socially responsible and culturally inclusive. It relies on two case studies where communication designers collaborated with local communities on digital story telling projects, which resulted in the generation of a series of themed animations. Animation shares its derivative with the Latin word for breath: to draw air into the lungs and spirit, to inspire, to breath life into: this what these projects sought to achieve. It traces the history of digital story telling projects, whose aim has always been to counter the effects that the mass media and mainstream entertainment industries have played in silencing marginalized communities. It challenges the belief that communication design education is about teaching students how to align with disciplinary norms, which is filled with unexamined and tacit assumptions about the profession and society as a whole. Rather it asserts that design pedagogy should be grounded in ethics, providing students with opportunities to think not only critically about the world in which they live but which also challenges the mantle of communication design to create products that encourage rampant materialism fostering the shallowness of western culture. This may seem antithetical to the purposes of design education, yet almost all university design courses identify both a worldview and a practice grounded in ethics as desired graduate attributes. We see art and design education in terms of Atkinson's notion of pedagogies against the state, in particular 'pedagogy as a form of resistance to liberal democratic economics as the driving raison d'être for state education'.

## Keywords

Design pedagogy, human rights, digital storytelling, marginalization, and ethical creativity

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*Painters must want to paint above all else. If the artist in front of the canvas begins to wonder how much he will sell it for, or what the critics will think of it, he won't be able to pursue his original avenues. Creative achievements depend on single-minded immersion. [Csikszentmihalyi, as cited in 1]*

## Introduction

We were first introduced to digital storytelling about a decade ago, when we were working on large community theatre project with migrants who lived on an inner city housing estate in Melbourne, Australia. The project was building slowly, but we had become anxious that even after six months of working with the residents, we still had no tangible product on which we could rely. We were beginning to wonder if anyone would put their hands up to come forward to be on the stage and as a result, we decided to start coming up with alternative ways of producing the product we had been charged with delivering. Of course, we need not have worried—by the time the show went live more than 350 residents had helped to shape the show, which went on to win an Australia day award for community event of the year. However, in a moment of panic we decided to take some of the personal stories that had been told to us by the residents and invited a team of students studying communication design to animate the stories for inclusion in the theatre show. Instantly we solved a number of logistical problems inherent in large process driven art-making activities. Firstly, it provided an opportunity for those who wanted to be involved in the show, but who were too scared to get on the stage with the opportunity to be included. Secondly, by showing the animations when we needed to change the set on the stage, we diverted attention away from the stage and up to a large screen located high above where the physical action was taking place. The animations worked to re-engage younger audience members with limited attention spans by breaking up their focus, and for us as the artistic team, we bought ourselves a sense of relief, that at least we would have some product to show the funding bodies who had invested in us. Each animation was included as part of the theatre show, but at its conclusion, whilst the performance remains nothing more than an ephemeral memory for those who witnessed it, the animations have a second life, as they were so

easily able to utilize emerging digital technologies to house the works produced [2]. But it was this moment of panic that sewed creative seeds about the power of layering personal narrative with symbolic imagery, which act to challenge hegemonic ways of viewing the world in which we live [3]. We watched as a number of unexpected outcomes occurred for those who had shared their stories and also for those who had brought their creativity - breathing life into the stories of ordinary people who had in fact lived extraordinary lives.

## Digital storytelling

Storytelling, which is one of the oldest art forms in human history, has always been the primary method for ensuring that information, wisdom and logic is transmitted from generation to generation [4]. It assists in the propagation of culture as it communicates the values and customary practices of a community, providing a lens through which we see the world [5]. Over the years, storytelling has always formed a partnership with the latest visual technologies available, whether that be through illustrative cave drawings, through to the development of the printing press, from the development of the moving image on films, television or via the internet [6]. Also described as multimedia authoring projects [7, 8] the original aim of producing digital stories that could be shown via the internet was to counter the effect that the mass media and mainstream entertainment industries had in silencing marginalized communities [9]. As a form of social action, it is located in postmodern concepts of human rights, which encompass key principles including: that everyone should have the right to experience dignity in their daily lives; everyone should have the freedom to make choices about their life; the right to develop their potential as human beings; and to have their culture respected. In our minds, human rights and social action are inextricably linked. They represent the two sides of the same coin. Human rights refers to a set of beliefs that drive personal action. Social action refers to the way that a person demonstrates their commitment to human rights principles.

Lessig argues that the power of digital storytelling is that it has the ability to be socially inclusive, which in turn causes disruption to the dominance that commercial media plays in distribut-

ing and propagating messages about what and who in this world matters [10, 11]. The notion of being excluded from the cultural production and the visual representation of a community of which one is a part, interests us greatly. We can extrapolate from other disciplines that focus solely on visual communication just how pervasive its effect can be on one's psyche. Crain, former senior editor of America's leading publication on advertising, notes that only 8% of the messages contained in adverts are received by the conscious mind, with the other 92% being worked and reworked over time deep within our subconscious [12]. Who is represented and what they are doing in that environment sends strong messages to us about who belongs. Equally, Foucault [13] notes that discourses, through which power is circulated, are characterized as much by who is excluded as they are by who is represented.

In taking this idea further, Kilbourne in her ground breaking documentary directed by Jhally about how women are portrayed in the media, notes how visual communications sell messages of normalcy – of who we are and who we should be. She states:

*And just as it is hard to be healthy in a toxic physical environment, where the water may be polluted, it is difficult to be healthy in a toxic cultural environment—an environment that surrounds us with unhealthy images, where our health is sacrificed at the expense of profit [12].*

Bourdieu [14], in discussing cultural value and its link to status within the community defines this concept as symbolic capital. He believes that symbolic capital can be embedded in the built environment and that artifacts or signs of cultural production can become the authoritative embodiment of cultural value. The housing estate on which we worked was located less than four kilometers from the city centre. It is located in Brunswick street, which has been heritage listed as a site of cultural significance. The local traders association describes the suburb in the local newspaper in the following glowing terms:

*Loved by locals, adored by visitors, Brunswick Street is one of Melbourne's most exciting shopping strips, with an individuality and flair that is so very ... Brunswick Street! One of Melbourne's original shopping precincts, Brunswick Street has grown over the years to become an eclectic mix of cool cafés, up market restaurants, boutique and antique shops. It has an*

*unmistakable atmosphere of creativity, which throbs from the pavement on which so many of our finest artists have walked. In recent years Brunswick Street has become a popular must see for tourists, who fall in love with this epitome of café society and the heart of Melbourne's cultural life. [15]*

Images of Brunswick Street and the culture it contains are commonplace. You see them on billboards, in magazines; it is used regularly as a film location and features on most council communications. Yet when we look at the images we note the pattern that is emerging. We note what is not included, what has been left out of the images, what has been forgotten: the flats and the people who live there. It is as if every time a photographer takes a picture of Brunswick Street they stand with their back to the flats, ignoring their existence. They are eradicated from the view of what constitutes culture even though they house 3000 individuals who bring to the street 38 culturally and linguistically diverse identities. With this in mind, in an attempt to heal what Vellet [16] refers to as 'cultural wounds', telling these stories becomes of crucial importance, and for us it becomes important that we use our creativity 'as if the world matters' [17].

How the estates are represented, and the examples of cultural production they include act to tell us what is valued and who matters and it is not hard to decipher the messages [18]. This is because our vision has become highly specialized as a result of technological developments, meaning that we are now quite capable of quickly classifying what we have seen as soon as we register what it is [19].

*From the subway to the supermarket we are constantly confronted with signs logo's packages posters publications and advertisements that have been designed to illicit a response: stirring the emotions, guiding the intellect, conveying social values. In contemporary culture literacy depends not only on the alphabet but also on a vast vocabulary of visual styles and symbols—they help to shape the meaning of everything we see and read. [20].*

On a housing estate, it is not hard to see what society privileges or what values we serve. It is the intersubjectivity of the estate environment that allows for the formation of a shared sense of collective self and either a willingness or unwillingness to take ac-



tion [21]. It is clear that the way that power is transmitted between generations living on the estates disadvantages them within certain institutionalized settings.

Because digital storytelling focuses on personal narratives, the process allows participants to find their voices whilst also placing aspects of their experiences into public awareness [22]. The multimodal approach to art making, which starts with the spoken or written word, which is then transformed into a visual medium provides us with further opportunities to ‘thicken’ stories and the opportunity to review the emphasis of the narrative. As Rogers states, when discussing the multimodal approach ‘a creative connection occurs as one art form kindles a response in another art form’ allowing for the processing of information and for new meanings to be made [23]. In this way, digital storytelling has the capacity not only to shift how the maker understands themselves but when grouped with similarly themed stories provides us with the larger story—a meta view of the world and our place in it [3]. This also provides us with the opportunity to challenge wider social and cultural discourses because we can see how and where we belong. As a socially inclusive process, [10, 11] it also provides participants with the opportunity to contextualize their experiences within wider discourses. There is much evidence that art making has the capacity to shift how individuals understand themselves, which in turn changes how they see their ability to contribute to the wider community [24-27]. The act of telling stories about the critical incidents in our lives provides us with the opportunity to construct new ‘social, cultural and historical understandings’ [2]. As a tool for empowerment it is currently used in a wide range of educational and community settings [28], as a technique for community engagement and as a therapeutic medium [29]. One thing we know for sure is that ‘We live our lives according to the stories we tell ourselves and the stories that others tell about us’ [30].

Washington & Moxley [22] assert that using creative means as a tool for social action provides the audience with new and sometimes disturbing knowledge, that may exceed their own experiences. It demands that the audience respond to what they see and hear, placing an onus on them to be part of the solution and rousing people to action [31]. Washington and Moxley [22] regard that:

*From the standpoint of social action, the portrayal of the lived experience may be adept at stimulating public awareness, arousing public indignation, and fostering collaborative action to find ways of rectifying human tragedy.*

When the animations were shown for the first time, we asked a local community worker to sit with one of the residents who had shared with us her story—to witness it with her. She had shared with us the story of how she had arrived in Australia from Vietnam, via refugee camps; a journey she made on her own as a small eight year old. She was the only member of her family to make it out of the country and it tells of how she had to survive on her own. When she has told her story to us in the past, her sense of guilt—at surviving, at the expense of her family is always palpable. She sends most of her wages home to her family and aims to create a thousand crane birds each week—her own personal vigil of her hope for peace. She does not see herself as a survivor, or as an extraordinary woman who had the courage to live, without the support of her family of origin; she does not see herself as a professional woman who has a university degree, which she now uses to help others. She does not see herself as the unwilling pawn in a war built on greed that tore innocent families apart, asking them to make unconscionable choices about who should live or die.

Her eyes were glued to the screen, at first disbelieving what she saw. She watched it a number of times as slowly the power of what she saw sunk in. White and Epston [32] believe that as we go through life, we tend to ‘internalize certain beliefs about ourselves that blind us to many other vital experiences in our lives’. It is as if we each have inside of us a small tape recorder that tells and retells us the dominant story of our life—who we are, where we fit and why we are the way we are. Our tape recordings allow us to make sense of our lived experiences, which are shaped by the political and cultural circumstances in which we live; and it takes on the values they contain which help form the self identities we project out into the world [33]. Having discarded or ‘pruned’ those events that do not fit with the dominant evolving stories that we and others have about us, the stories become embedded into our psyche. Thus, over time and out of necessity, much of our stock of lived experience goes unstoried and is never ‘told’ or expressed [32]. Digital storytelling is interested not only in the deconstruc-

tion of self narrative but also in the dominant cultural knowledge that a person lives by—in other words ‘the deconstruction of the discursive practices of our culture’ [34]. It is interested in deconstructing notions of truth, which will always be pluralistic and relative [35] but it is here where the biases and prejudices hide, which seek to subjugate a person’s life [34]. The deconstruction process involves externalizing the stories that speak of identity. Telling ones story elicits one way of understanding the dominant story. By having an artist thicken the story, through the layering of visual images allows for new understandings and connections to be made in how the story is contextualized. It acts to externalize in the most literal sense [36]. The story this woman shared with us is not unique—64% of the residents who live on this housing estate were born in Vietnam, all fleeing from a war that did not need to take place [37]. Telling her story mattered to her neighbours and to their children and sought to contextualize the struggle that this community experience as they start new lives in Australia leaving behind a familiar landscapes and significant family members. It is the same with other discreet communities that we have worked with. Coming to understand that dominant ideologies impact on the sense of self in unhelpful ways is always liberating. A few years ago, we started working with people who had experienced homelessness. They told us their stories, about their pathways in and out of homelessness and we captured the specificities of their stories as a set of animations. These captured the sheer heartbreak that their lives had included, celebrated their triumphs and together used the process to make sense of our lives. Every night in Victoria 23,000 people will be homeless and nationwide more than 100,000 people will be homeless [38]. The pathways into homelessness are complex and varied. They include a lack of affordable housing, substance abuse and the lack of needed services, mental illness, domestic violence, family crisis, and poverty or insufficient income [39]. Fiscal, social and public policy contribute to homelessness as can cultural causes, such as the provision of inappropriate housing for migrants and indigenous communities [38].

As one of our most vulnerable communities, the homeless experience discrimination on a daily basis. They are excluded from many services that we take for granted. They get trapped in

cycles of dependence, they find it hard to hold down jobs and they begin to appear more frequently within the justice system, creating a never ending spiral of self loathing. They are judged for how they look and smell and they are treated as if they are dangerous and delusional, rather than being seen as human beings who have lived through hard times. The discrimination this community experiences is extreme: it keeps them trapped in cycles of poverty that impact harshly on their health [40]. The links between poverty and discrimination have been well documented [38, 41] as has the costly impact with which this behaviour burdens the entire community [42]. There is no doubt that homelessness and poverty are among the most serious socio-economic and health issues confronting Australia and the western world in the twenty first century [22, 38].

When working with this community, the stigmatization associated with having experienced homelessness was conspicuous. It affected every part of their being including their self confidence and belief in their ability to participate in community life. As we listened to their stories, we became aware of how unique each of their stories were—there is no one pathway into homelessness or out of it. The common belief that homelessness only affects a certain sector of the community or that it is their fault that they ended up living on the streets were myths that needed to be busted [3]. It became apparent to us as we witnessed their stories, that their personal narrative was that they had done something to deserve what had happened to them; that they were fundamentally flawed and had brought this on themselves. Seeing their stories honoured in film was a life affirming experience. It allowed the participants to reauthor their story this time within a frame that helped them to understand the ‘why’ and to see themselves as courageous survivors not flawed victims. By taking the problem outside of their heads and placing it on film it gave them a more objective way of viewing their story and slowly they started to see how fate, politics, greed and sheer bad luck had kept them marginalised and incapable of making change in their own lives. They realised that by sharing their stories with others that they had something to offer the world, that they belonged and mattered. It was an important way of building self-esteem in a community that is constantly marginalized as a result of life experiences that

many of them had no control over. Seeing their story side by side with others who had experienced similar tragedies acted to contextualize their lived experience within a wider cultural context. As with most digital media storytelling projects, the process had the ability to instill confidence in participants, as they come to realize that their life story is unique and worth telling [43].

### Communication designers

Something powerful happened for those students who used their skill to animate these extraordinary stories. The process provided the students with valuable industry experience but more importantly with the opportunity to think not only critically about the world in which they live, but also to think about how designers can make ethically responsible work, rather than churning out logos, brands and adverts aimed at what Allen [44] believes encourages rampant materialism and fosters the shallowness of western culture. It challenges the belief that communication design education is about teaching students how to align with disciplinary norms, which is filled with unexamined and tacit assumptions about the profession and society as a whole [45]. This may seem antithetical to the purposes of design education, yet almost all university design courses identify both a worldview and a practice grounded in ethics as desired graduate attributes. We see art and design education in terms of Atkinson's notion of pedagogies against the state, in particular 'pedagogy as a form of resistance to liberal democratic economics as the driving *raison d'être* for state education' [46].

Working within community settings is not a novel concept for artists. Artists, either individually or whilst working alongside communities often tell and retell histories, some autobiographical, that attempt to depict historical stereotypes or assumptions that have shaped collective memory and identity [47]. Located in Freire's theories of empowerment through participation [2, 48], the art we make demands that designers use their skills to become part of the solution rather than as one of those who sit on the fence silently yet vicariously supporting the problem [48]. One of the project team described it like this:

*You know, I don't think I ever told you this but doing that job with you at the Fitzroy flats completely changed my*

*life. For good, I mean. It was one of the first times that I did a job and came out of it feeling so proud that I really felt like I had helped make a positive difference to peoples lives [49].*

### Conclusion

Benmayor suggests that digital storytelling has become a signature pedagogy for the new humanities, as it provides a powerful medium for learning that traditional writing can no longer offer (Benmayor, 2008; Coventry, 2008; Leon, 2008). By layering the spoken word with visual images it provides opportunities to thicken stories—stories that need to be told in order to challenge hegemonic ways of viewing the world in which we live.

Freire states that every human being, no matter how ignorant or submerged in the culture of silence he may be, is capable of looking critically at his world. Provided with the proper tools for such an encounter, he can gradually perceive his personal and social reality as well as the contradictions in it and critically deal with it [48].

Nearly two thirds of the world still dream of a life where they can experience freedom from fear but for artists privileged enough to live in the western world, the challenge is not to fear our freedom.

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## INFORMING WITH ANIMATION

The raise of the new language of 'informanimation'



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### Abstract

Among the many innovations that have recently affected the world of animation, over the last few years we have witnessed a new trend, that we have called 'informanimation', that exploits the versatility and communicative potential of the moving image language to deliver contents that are mainly informative.

This article, by presenting the unfolding scenario, aims at highlighting the foundational nature of the hybrid language that is taking shape around this new trend, underlining how the original combination of elements coming from different fields: animation, graphic design and visual communication, typography, infographics and motion graphics, is today offering us an extraordinary communicative palette. In order to do so, the article discusses specific aspects of this new area of study that make it unique and worthy of further investigation. The article discusses the theme through a short historical perspective and the analysis of a selected group of case studies. Finally, by focusing on some possible future developments of this new 'genre' we introduce potential synergy opportunities with the new scenario resulting from the expanding communication space defined by social networking.

### Keywords

Information Graphics;  
Animation; Visual Culture.

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## 1 · Introduction

Research work carried out over the past few years at the animazionedesign laboratory of the Department of Architecture Design and Planning of the University of Sassari (Italy) has highlighted the emergence of a new area of study, that we have called 'informanimation', which over the last years has been increasingly developing its presence on the internet. In the track of the web 2.0 culture [1], we are in fact seeing more and more opinion groups, non-profit associations and organizations, with particular emphasis in social, environmental, humanitarian areas, exploring the potential of this new form of communication to develop new channels of communication with an ever widening web-based audience, giving shape to new forms of awareness, participation or even simple information.

The role of animation's language capacity to communicate in an effective and concise way plays a key role within this context, contributing in making complex sets of information more accessible and understandable to the public, and supporting the development of new social processes.

But do we really need another neologism to describe an area that clearly has strong connections with other forms of communication which have themselves recently gone through interesting developments? There is no doubt, for instance, about a strong contact between informanimation and infographics, and its use of diagrams, elementary graphic and visual coding, to convey ideas. Informanimation also has much in common with motion graphics, where a concise way to vehicle information is achieved by moving graphic elements and by reinforcing concepts with typography, often in combination with sharp editing, music and sound effects. Although the existence of obvious-and often very fertile-points of contact with many areas of contemporary communication, it is our opinion that informanimation must be seen as a completely new formula, which combines in an original arrangement, elements coming from other disciplines.

In fact, the very fact of being a hybrid form of communication is what makes informanimation not only attractive, but also very powerful. Being able to take advantage of an iconographic universe and a multi-disciplinary background that spans from graphic design and visual communication to typography, from info and

motion graphics to journalism and content editing, makes it easy for informanimation to play at a multitude of different communicative levels. Allowing it to 'speak' in a direct and effective way to different kinds of audiences, and hence, to respond to the many informative challenges of our time.

Another crucial question deals with informanimation interacting with the contemporary scenario of communication on social networks. Being a true medium of the age of internet networking, the success of informanimation as a form of communication is tightly connected with the growing attitude of sharing fragments of information, very often images or videos, within a web-based community. In this perspective short informanimation films increasingly play a key role in the building of social or environmental awareness campaigns-as elements capable of engaging the public's attention on a specific issue.

As we shall see, either aspects: the 'new', hybrid and integrated communicative palette of informanimation and its being intertwined with a wider and articulated informative system, are what make this emerging actor in the universe of contemporary communication particularly worthy of being researched in depth.

## 2 · Historical perspective: notes about the transformation of a storytelling pattern.

The practice of exploiting the language animation to achieve informative objectives, primarily within the production of instructional films and documentaries, is something as old as cinema and animation themselves. Although confined to an undoubtedly minor genre, this practice had lead to the production of many films, often of very high quality [2].

Some of the key communicative elements of this genre can be found among the very first samples of informative animation, as in the case of Winsor McCay's 1918 "The Sinking of Lusitania". McCay's dramatic reconstruction of the sinking of a passenger ship by a German U-Boot, is a very moving film as well as a true technical masterpiece. Animation is in this case used as a tout-court narrative solution: a way to tell the story in absence of actual material -none to record the torpedoing of the ship and its sinking on film- while keeping the audience's attention. It is solely thanks to McCay's fine fictional animated sequences that the audience

can witness the ‘actual’ events.

As cinema started making its way as the emerging channel of communication of the 20th Century, other examples reached new audiences. Animation, mainly combined with live action sequences, found a new dimension, particularly in specific instructional films devoted to scientific or technical visualization, and increasingly in the area of medical education [3]. In this area of application animation has been used more and more to visualize not only events of the past, but abstract concepts and phenomena otherwise invisible to the naked eye [4].

An early example is ‘Skin’, a medical informative film produced in 1926 by the Department of Biology and Public Health of MIT. The silent film relies on on-screen written text to present its various chapters to the audience, combining live action set-up scenes with zoom-in-like enlarged stylised diagrams. Among other things, the graphic charts present cut-outs of the epidermis, the (animated) behavior of cells and of hair follicles. Post-production compositing of the action, supposedly performed by a doctor, of a pointing stick, adds a final touch presenting information in the form of some kind of dynamic black-board.

‘Fly American!’ is an early promotional film, produced by Progress Film Company, Chicago, for American Airways in 1933. The film aims at depicting flying as the new mean of fast transportation in the American continent, combining aerial landscape footage taken from a real plane, and mock-up travel scenes with actors playing the role of flight crew and passengers.

Animation is used in short sequences showing the itinerary as the plane flies from Chicago to New York; presenting very graphically how radio impulses are used to guide the airplane through its course. The film also includes partially animated early examples of infographic charts depicting the increase of passenger traffic from 1928 to 1933 and a clock-shaped chart comparing travelling time between train and airplane.

Animation played an important role as a tool of propaganda during WWII. Widely used to entertain and inform soldiers, animated sequences often served as humorous introduction to war news. Here, in order to lighten the atmosphere, the enemy was made ridiculous through highly exaggerated caricatures. But animation was also used in classified training films. An

example following both patterns is the 1942 training film “Stop that Tank!”, produced by Disney Studios for the National Film Board of Canada, aimed at training infantry soldiers on the use and maintenance of the Boys MK-1 anti-tank rifle. This film is particularly interesting in our perspective for it seamlessly blends two opposite extremes in the use of animation in informative documentaries. The first is purely entertaining and narrative: the film is introduced by a long sequence in the style of humorous cartoons showing a caricature of Adolf Hitler being sent in front of the Devil, and ends with a ‘Snafu-like’ cartoon soldier character passionate with his Boys rifle to the point of taking it to bed every night. The middle section of the film is instead characterized by a second approach, mainly informative: the atmosphere gets much more serious as the audience is confronted with how to use the deadly weapon, through extremely accurate animated drawn and photographic technical explanations.

Stop that Tank! is a mature example of the exploitation of animation’s vast repertoire of ‘tones’ to successfully convey complex contents, such as the technicalities of the anti-tank rifle.

In the classic “Why We Fight” series of documentaries, a massive propaganda effort in seven episodes directed by the US War Department film section’s director Frank Capra between 1942 and 1945, short animated sequences produced by Disney’s Studios are combined with archive footage of fighting, to illustrate graphically, and very effectively, the Nazi’s battle strategies and plans to conquer the world.

After the war informative animation becomes the vehicle of large awareness campaigns in social, political and often public health, as in the case of the next film we will examine. The animated short “Inside Magoo”, produced in 1960 for the American Cancer Society by UPA and starring the highly empathic character Mister Magoo, follows the tradition of using animation to engage the public and hence transmit practical information (here the ‘seven danger signals of cancer’, a list of possible symptoms that may indicate the illness) encouraging viewers to have a regular medical checkup. What makes this film interesting in our perspective is that it explicitly mentions the role that animation can play in transmitting social messages. The film is preceded by a short introduction presenting the evolution of the moving pictures and

animation's role in this process to tackle 'serious' topics. In the introduction sequence Steve Bosustow, one of UPA's founders comments that "at first it was believed that animation could only use humor, but soon they found that sometimes a drawing was clearer than a picture, or a drawing could take you where a camera could never go". Shortly after, actor Jim Backus (Magoo's voice) adds: "by being funny I hope I can make you watch and think about something you maybe don't want to think about...".

Once again animation is used mainly as a way to engage the public, taking advantage of the popularity of its characters to present facts that may sometimes be unpleasant. The cartoon starts by presenting a series of situations where Mr. Magoo is a stubborn character refusing to go to his check-up. When Magoo eventually goes, he finds out he is perfectly healthy. The closing live action scenes take us to a pretend medical practice where-with the aid of amusing stop motion effects-Jim Backus gets his own check-up assisted by a real doctor who reassures the public on what a typical medical examination is about.

At the dawn of the Sixties informative animation finally starts departing from the traditional model based on the combination of narrative tricks and of its characters' empathy, turning to new formulas. Now putting the transmission of informative contents in centre stage, we see an evolution towards mature solutions that represent true milestones in the field. The role of animation changes from basic tool to engage the public to a new form, gradually blending with other elements of communication. The resulting language is a powerful mix in which clever direction and careful design take a crucial role.

A sharp example of this new approach is the 1960 industrial film "Elea Class 9000", produced for the Italian computer company Olivetti, a leading corporation in industrial and corporate design, to introduce a new mainframe computer. The film presents the company and describes the birth of its innovative computer by showing live footage of the factories, the workers, the laboratory researchers, as well as the new piece of equipment. Live action shots and interviews are enriched by interesting animated sequences, developed by Olivetti's art director Giovanni Pintori and animation masters Gianni Polidori and Giulio Gianini (the film's music score is by Italian composer Luciano Berio). The

animation is used here to present complex and abstract (at least at that time) concepts, such as the inner workings of an electronic computer and how the use of information technology can improve production management in a car factory.

The key element of such new approach is that animation has abandoned a supporting role, such as illustrating minor details of the main story: animated scenes are now part of the narrative backbone of the film.

Let's now turn our attention to one of the most important pieces in the history of instructional films, a true cornerstone in the process we are taking under scrutiny.

"Powers of Ten" is a 1968 scientific documentary by American designers Ray and Charles Eames aimed at explaining the relative scale of the Universe in factors of ten. An adaptation of a 1957 book by Kees Boeke, Powers of Ten is an early multimedia show. A true masterpiece in scientific visualization, 'Powers' is a motion picture that blends in a new communication ensemble photography, graphics and illustration. The film presents a fascinating, and to some extent 'fantastic' visual journey through magnitudes without using any actual footage, solely relying on the clever compositing of a collage of different images and basic camera effects. A key element here is the exquisite design, the rigorous direction, and the pioneering graphical interface used to frame all different elements into a coherent scheme.

### 3 · Informanimation

The legacy of films such as "Elea 9000" or "The Powers of Ten" is directly connected to recent trends, tightly associated with the digital revolution, and particularly to the ease with which it allows the creation, editing and combining of visual material from a wide variety of sources. The accessibility to production tools that are currently available to communicators: be they animators, illustrators, graphic and media designers, or just the curious, has reached unprecedented levels.

At the same time, authors can today share and distribute their design work easily and for free on a variety of 'new places' (YouTube, Vimeo, Social Networks), with a virtually unlimited potential audience. This emerging scenario has stimulated the production of a new generation of audio-visual projects, strongly based



on animation, and primarily concerned with social, environmental, political and scientific issues. We have called this new field 'informanimation'. We will now try to outline some elements that are common to this very wide area by analysing three projects. Jonathan Jarvis' 2009 "The Crisis of Credit" is an informative animated film that combines icons, typography, simple character animations and camera movement, isotype-like charts and moving diagrams, within an extremely neat vector-like graphic style, to describe in less than ten minutes the recent credit crunch crisis. Started as a personal project by American interaction and media designer Jarvis, "The Crisis of Credit" has rapidly become an internet success.

Another interesting example is the 2011 animated short "The Coalition of the Willing", the product of the "Coalitionfilm" collaborative effort. Under the direction of Simon Robson and Tim Rayner, a network of twenty four studios and authors around the world have agreed to contribute to the development of this project, giving life to a fifteen minutes animated short film "about an online war against global warming", composed by a wide variety of graphic styles and visual approaches.

In 2010 the British Royal Society for the encouragement of Arts, Manufactures & Commerce (RSA) turned to Cognitive Media in an effort to translate in visual form part of the conferences that they organise on a regular basis as part of their institutional activities, previously recorded as video lectures.

The result is a series of beautiful online animated shorts (one of which is "Changing Education Paradigms") based on Cognitive Media scribing and visual synthesis techniques and hand-drawn schematic diagrams. As Cognitive Media remarks: "The combination of the great RSA audio content, the mechanism of the Cognitive Media visual ideas and direction and the technological platform of YouTube all work together as a triumvirate attracting and engaging viewers all over the world".

Animation has traditionally taken advantage of its 'semantic versatility', by exploiting a vast repertory of visual solutions to achieve an assortment of communicative results [5]. By adding such natural properties to the communicative add-ons of the musical score, sound effects, the power of the language of cinema and storytelling, animation can further enrich its capacity to

convey meaning and emotions, standing out as one of the richest available forms of communication.

On the other hand, the visual variety and communicative richness of the examples we have discussed earlier show us how the new formula that we have named informanimation has incorporated elements coming from the traditions of a variety of different areas of visual communication. In informanimation graphic design, motion graphics, info-graphics, typography and illustration join forces with animation to shape a completely new form of language, an entity that is an original combination of all these areas.

Being able to take advantage of a set of communicative elements, from various areas is a great opportunity, but as a matter of fact it is the combination of such communicative properties and the current scenario of social networking that makes this new genre stand out as an important player within the contemporary landscape of communication.

Discrete units of information based on the language of animation, of different lengths and at different degrees of informative depth, have today become the kernel of an increasingly sophisticated communicative system distributed on a network of nodes. The informative eco-system that has evolved around the "The Story of" Project (<http://www.storyofstuff.org/>) initiative is a very good example of this trend.

A twenty minutes animated documentary, produced by FreeRange Studios with American activist Annie Leonard, "The Story of Stuff", discussing current consumerism models and their impact on social and environmental issues, is at the heart of a stimulating network of initiatives, rapidly attracting in a huge community and giving life to a vast series of spin-off activities. Not only the original film has been followed by other and new 'stories' (of Change; of Broke; of Citizens United vs. FEC; of Electronics; of Cosmetics; of Bottled Water; of Cap & Trade). The "Story of" Project is today a reference point for new patterns of social initiatives and participation, taking maximum advantage of the contemporary scenario of social networking, web and mobile communication.

These documentaries are ordered in sub chapters, and can be seen either as a closed product, to be watched as a whole in a sin-

gle session, or as the starting point for various further activities: the guide for a deeper research or to further reference material, the starting point for a local action group. A 'simple' animation becomes thus the core of a vast and successful awareness campaign. "The Coalition of the Willing", that we have discussed earlier, follows a very similar approach, and more new projects, like the recently released "Do We Really Need Industrial Agriculture to Feed the World?" film, from the Food MythBusters Organization, are following this track.

A brilliant piece of informanimation, "The Clock is Ticking", produced by Portland Oregon based advertising agency Wieden+Kennedy, is at the heart of the girleffect initiative (<http://www.thegirleffect.org>), a non-profit organization aimed at ending poverty and offering equal potential to 600 million adolescent girls around the world.

#### 4 • Conclusions

The creative area that we have named informanimation unfolds in front of us as a perfect example of communication forms to come. The animated pieces we have described take their communicative strengths from the combination of a variety of languages and formulas from the world of visual communication, storytelling, journalism and content editing, giving shape to a new form of communication that stands out as one of the true novelties in the contemporary arena of global communication.

These new forms of animation come in a varied array of formats; are increasingly dynamic and interactive; are meant to be shared, watched on-line and on mobile devices. Furthermore, rather than unique artistic statements, such informative products are part of distributed communication systems, often very sophisticated. Finally, as elements of the contemporary communication space, they can expect to reach audience numbers uncommon to traditional animations.

"The Clock is Ticking" reached 3.861.979 internet views at time of writing.

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# ANIMATION AND INTERACTIVITY IN GOOGLE ILLUSTRATED LOGO



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## Abstract

One of the main characteristics of Google's visual identity, and in particular of its logo, is its progressive approach towards images that are somewhere between open and polymorph, conceived of with a chameleon-like ability to transform. Google's search engine homepage gets millions of hits from all over the world, and is thus the shop window that allows the company to get users' attention via Doodles or illustrated logos.

The latest Doodles produced by the search engine have been focusing on offering new brand communication solutions that are somehow linked to the entertainment industry and primarily based on the use of animation, interactivity, sound, etc. as part of the temporary logos.

Updating contents is integral given organizations' need to communicate with their audiences in contemporary ways as required by the current media environment and brutal competition.

This led us to look further into the first Doodles to transcend the static images that had been used since the search engine was first created in 1998. Although there is no doubt that the decision to illustrate a corporate identifier was a totally daring and innovative idea in the company's beginnings, the current situation poses new challenges that have to do with more attractive ways to refer the events the corporate identifier alludes to. The inescapable need to plan and design more sophisticated ways to communicate as far as the resources in use are concerned becomes clear if we take a look at the new ways in which these identifiers are being dealt with. According to the US Patent and Trademark Office, Google's logo, and, in particular, Doodles are a patented method to encourage access to a certain website.

## Keywords

Corporate visual identity;  
interactivity; animation;  
branding;

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## 1 · Introduction

The Western world is living a historic time with brands being part of contemporary popular culture and corporate identifiers being integrated in all kinds of different spheres. Research is being done not only into new ways to improve the image of products, services or ideas, but also into new formulas to cultivate the loyalty of customers and attract new ones, in a market organizations have saturated with many slightly different outputs.

Conceiving a brand nowadays has little to do with the trend that used to be in vogue when modern brands were born – relating them to the idea of firm or manufacturer’s hallmark linked to a certain product rather than to the intention of selling the brand as described by Costa [1, p. 79].

Google Doodles follow these parameters, for they are outputs issued by the company and aiming at the users of the search engine. These logos aim at reaching their audience by being fundamentally fun. We’ve known of this “way of doing things” since 1998, when illustrations of Google’s own corporate identifier inspired by the festive idea of celebrating certain events began. More than 1000 Doodles have been published on the company’s homepage, and the number of online Doodle users and fans is objectively quantifiable. Their repercussion transcends the limits of the search engine interface, their audience being definitely responsible for the generation of Google- and Doodle-related contents constantly posted in a number of websites. It was this consideration that led us to enthusiastically study the keys to their success.

## 2 · Background, methodology, objectives and hypothesis

Our obvious interest in Google Doodles led to a research that’s been going on since 2009. Our work has always been mainly oriented towards studying the value of the ephemeral and the mutability towards more effective, non-static corporate visual identities, that is to say, identities that avoid those images González [2, pp. 69-70] named close images because of their minimum permissibility regarding the liberties to be taken. This decision, which affects the corporate identity marks of an organization, is due to different reasons we won’t be getting into, for it would exceed the

limits of this paper, and we’ve already covered the matter [3].

This endeavor led us to consider the publication patterns of Doodles, back in 2011, aiming at proving how some of these patterns are actually constant features of Doodles, and represent an intrinsic part of their very essence. The results of that study gave us some very useful information regarding the origins of the most recent Doodles that are the focus of our current research. Having taken that into account, we went on with the study, focusing on reviewing the units implicit in Google’s corporate identifier and its declension. The Doodles’ ephemeral configuration, which consists of illustrated identifiers incorporating opportune messages for the celebration of certain events, with a strictly limited validity of one day, led us to develop and propose an analysis model. This model covers all the morphological variants that can either be maintained, transformed or erased from the Doodle. The aim of the model is to provide a relative measurement of the originality-triviality and redundancy-information dichotomies suggested by Moles [4, p. 140] as factors taking part in the effectiveness of the image. “Change”, the value of the unpredictable, doesn’t disorient users, but rather triggers their interest and motivation. Our method specifically measures the relation between recurrence and originality based on the modification (or its absence) of morphological aspects of the logo and whether or not it is recognizable and able to build costumers’ loyalty thanks to this strategy. Finally, in 2012 we set out to walk along a new road due to the fact that the variants incorporated by recent Doodles, which according to our hypothesis coexist with certain constant features we’ve already analyzed, lay new foundations for further research. We will set out how new types of Doodles coexist with old ones, and will put forward a wide and extensive range of subgroups distinguishable among the bigger group that brings together all of these special illustrated logos.

There’s some sort of parallelism between interactive Doodles and the well-known phenomenon of advergames. We will deal with this parallelism in greater depth by carrying out a study and comparative analysis between the Doodle commemorating Pac-Man’s 30th anniversary and a Budweiser brewery advergame. We will try to analyze the different ways in which the two different visual identities become part of a similar videogame.

The Pac-Man Doodle is a paradigm proving the increasing value of illustrated logos and other animated and/or interactive Doodles as a method to encourage access to a certain website [5, p. 79]. Among our aims is to approach and unravel the reasons behind Google's decision to animate their logo – why are they asking users to interact with others? But we also aim at explaining how they get their audiences involved through these strategies and what the resulting main benefits are for the company.

### 3 · Animated Doodles and Interactive Doodles

Throughout the years, since Google was born in 1998, its corporate identifier has undergone several changes in its design. Despite this, since its first version, illustration has been a constant feature. As we already pointed out [6, p. 341], the main aim of the first Doodle (1998) was to announce and let the users know the founders would be out of office during the Burning Man Festival held in northern Nevada, in the US, in case there were any problems with the server. As time went by, this first aim was overcome and replaced by a new one: achieving a better and innovative connection with the search engine users.

In the following years the number and the presence of Doodles gradually increased, but in the last four years, Google has also introduced certain changes affecting their final configuration. The main one is the emergence of animated and interactive Doodles, since 2009 up to now . There are around 36 cases from 2009, while they were almost inexistent from 1998 to 2008 inclusive. In most of the cases, the illustrated logos are no longer static images, generally .jpg files; instead, they give way to new illustration formulas introducing animation, video, interactivity, audio, etc.; using, in short, multimedia technologies of different kinds clearly in order to get users' interest and attention. Users' involvement is no longer passive, as it used to be with static images; it is now active thanks to Google proposals for more or less guided interventions through buttons or other formulas, promoting feedback between users and the search engine in a fun way.

#### 3.1 · From the narrative series to animated Doodles, interactive Doodles and/or Doodles with sound

In 2009 animated and/or interactive Doodles appeared, although according to our hypothesis there were some precedents to the latter. We are referring specifically to another form of Doodle: the one featuring several illustrated logos integrated in a sequential narrative to which we referred as Ds or Narrative Series Doodles [6, p. 356].

Up to 2010, serial Doodles were published individually, in consecutive days, according to their importance within the narration from a logical point of view, meaning the whole story wasn't wholly unveiled until all the Doodles were published; the narration lasted for as many days as Doodles were published, and in order for the series to be understandable everything had to be arranged in a certain way.

However, in 2010 a new form of Doodle came up. Although we will include it as part of the Ds group, this new form broke the temporal criteria that had been followed by its precedents since 2000. The commemoration of Hans Christian Andersen's birth was a series of Doodles that briefly told his renowned story of Thumbelina. What was particular about this case, and unprecedented, was the fact that all Doodles were published on the same day, and it was up to the user, who was helped out by back and forward arrows, to linearly navigate through all of the Doodles bearing the narrative weight of the commemoration.

Up to 2009 the company had shown a total amount of 13 series, the first of which was published in 2000 [6, p. 356-357]. Nowadays, this is a nonexistent practice, for this form of Doodles is no longer used by the company. Instead, animated Doodles have proliferated, and we think their emergence has a lot to do with the vanishing of Ds Doodles, which are, according to our hypothesis, their direct precedent.

The new innovative possibilities posed by this last trend give way to new kinds of Doodles proposing a greater involvement of the user, for the interactivity they suggest is far more complex than it used to be: it is no longer limited to a single click. The action now entails more information spending from users than the mere contemplation of an illustrated logo typical from the conventional form of static images. The materialization of this spending

is only justified by the wittiness, innovation and originality that foster the audience's interest and willingness to participate in the game suggested by the company within the interactive logo. Doodles have always been visual search terms predefined by the company, when you click on them you access results related to the event the Doodle commemorates. This is also the case with interactive Doodles, what's new about them is that they expand users' experiences of them.

The sound effect also dates back to the emergence of animated Doodles. This is an addition that strengthens the image's expressive value, highlighting it by taking it to a new dimension that surrounds the user and makes him/her feel inside it [7, p. 34]. There are different kinds of sounds to go with Doodles: sound effects and/or music. Good examples of the latter are the inclusion of John Lennon's Imagine and Freddy Mercury's Don't Stop Me Now as part of the Doodles commemorating the singers' careers. We will now analyze different general Doodle profiles based on their technological approach and the multimedia elements they bring together, although we should clarify that due to the fact that there are still not many of them, and because we had to classify them somehow, we've had to make big, general subgroups of Doodles in which more than one of them could fit.

### 3.2 · Youtube video Doodles

Around 6 animated Doodles are videos uploaded to the popular site Youtube, currently owned also by Google.

In 2010, Google commemorated John Lennon's 70th birthday, and the resulting Doodle broke some of the patterns that had by then been repeated for more than a decade. These Doodles open a new and very interesting path for the future, because they offer information in a contemporary way and manage to persuade their audience at the same time.

When you roll your cursor over these Doodles, you notice the Youtube player characteristic design, with its usual button board at the bottom of the window. This effect can currently be recreated in the official Google logos site [8]. There's also a play button in the center of the window, integrated within the static image of the video that you can only see once it's been activated.

The pattern regarding the validity of Doodles is still the same,

and is good proof of its ephemeral nature: Doodles last just one day. Some behaviors regarding their publication have turned into constant features that partially determine Doodles' very essence and are virtually attached to this corporate identifier since its birth [6].

We should point out that despite the noticeable differences between animated Doodles and non-animated Doodles, both kinds follow the same pattern as far as their commemorative spirit is concerned: they aim at commemorating something and there's always a positive flair to them .

The contents of the videos featured have different origins and degrees of iconicity. If we have a look at Villafañe's and Mínguez's iconicity scale [9, p. 41], Doodle images fall into different levels; sometimes they're drawn and based on unrealistic figurative representation; but some other times the film settings and characters could belong to real life. Some good examples of the latter are the Doodle commemorating Charlie Chaplin's 122nd birthday, published in April 2011, and the one published in October that same year on the occasion of Halloween.

Charlie Chaplin's Doodle emulates a cinematographic style typical from the famous actor's silent films. On the other hand, the Halloween video shows in fast motion a traditional jack-o'-lantern carving, symbol of this Celtic-origin holiday.

The Earth Day Doodle published in April 2012 features a time-lapse animation of fading static images . Hom [10] tells us about her experience as a gardener with the rest of the team of doodlers, who on this occasion grew the Doodle instead of drawing it; in this way, they manage to raise people's environmental awareness and prove their own at the same time. This is interesting, not only because of the animation of the pictures taken while plants were growing, but because this Doodle physically develops in real life, real life shapes it. Its origin and its position in the iconicity scale give more credibility to its objective in the eyes of the audience. We should clarify, though, that the above-mentioned level of iconicity is not an exclusive feature of these last Doodles. Some static Doodles in the past were also based on images taken from real life, although less so than those which were drawn. In some cases images were touched up, so the final user was not always able to perceive the iconicity level implicit in the Doodles: i.e. the

Doodle commemorating the TV series Sesame Street. However, the color picture of the dishes of Chef Ina Garten chosen for the 2010 Thanksgiving celebration is easily recognizable.

### 3.3 · Interactive Doodles

Since 2000 and the Sidney Olympics, Google has commemorated this sports event without a break. For the first time, on August 7 2012, an interactive Doodle could be grouped as a Dg-type Doodle [6, p. 357], for it belonged to that thematic group. We begin this section by referring this interesting fact, for it is paradigmatic of the changes developed in Google's new propositions and their communication with users through their logo.

The unevenness of the propositions of different interactive Doodles makes it difficult to draw some guidelines that could help us delimit the phenomenon of interactivity in illustrated logos in an exhaustive and transverse way. Despite these difficulties, we will try to outline certain key aspects that will allow us to better approach and understand this fact, although these considerations could change with time and are dependent on the future evolution of this kind of Doodles. The future is yet to come.

The visual code implicit in interactive Doodles allows the company to guide the user's actions, which in turn allows the user to infer the rules and principles of the gameplay [11, p. 25] in question. Each Doodle features a different degree and kind of interactivity, so it's up to the user to learn how to interact with every fictional universe suggested, to decide what actions to undertake, etc. This learning will guide both the user's decisions and actions. Generally speaking, except for the Pac-Man Doodle, which is more complex as far as the rules of its fictional universe are concerned, interactive Doodles base their interactive pattern simply on the appreciation of the feedback between users and videogames or games up to this day.

The behavioral models determined by fiction react to certain stimuli such as pressing a key, a button, etc. We call these stimuli 'action', for they are the action implicit in the user, who is willing to participate in the Doodle.

Reactions will depend on the proposed fictional universe, on the characters, the settings or the events that are part of the representational dimension of each interactive Doodle. In short,

on the one hand there's the user's guided action, and on the other, the user's specific reaction.

Thanksgiving Day 2011 Doodle proposes a simple action: when you roll your cursor over the feathers of the turkey that illustrates the Doodle, their appearance changes. In order to fix the new image the user only needs to click on it. The action offers the possibility to infinitely change the animal's aspect, as in a loop, as many times as we want. Thus, in this case, the time the user stays on the homepage depends on his/her predisposition to do so or leave the game. Although due to the simplicity of the game we can speculate that the user will leave as soon as he/she gets how the game works and his/her motivation falls.

The proposals are generally based on a simple and easy behavioral model, based in turn on simple action-reaction principles that are catchy, in our opinion, precisely because of their simplicity. It's not only the proposed actions that we deem simple – pressing a button, rolling the cursor over something, etc –, but also the reactions, which imply a communicative system based on the action-reaction simplicity conceived for the Doodle.

### 3.4 · Pac-Man

We've decided to use the name of the famous Japanese videogame created in 1979 for the title of this section, because after all it's the game that inspired it.

In May 2010, Google published an interactive Doodle celebrating the 30th anniversary of the well-known video game . On this occasion, the commemorated videogame itself was used as Google's illustrated identifier. This decision was unprecedented; the 25th anniversary of the videogame Tetris was commemorated with a static Doodle.

Because there were no precedents, we set ourselves to look for similar examples elsewhere: this is the case with the Budweiser advergaming featuring a maze-type videogame created by the company for the occasion [12, p. 34]. We've tried to analyze how both companies integrate their visual identity marks in the videogames.

The company's name – Google – is conceptually fixed by a visual element – the line →: The line describes the outline of the letters that form the name, adjusting their morphology to the

geometry typical from this kind of videogames that offer a recreation of space from a zenithal point of view. The name turns into part of the setting where Pac-Man and the famous ghosts roam. The corporate name is integrated in the maze-like setting of the videogame, and, at the same time, the corporate colors have an univocal presence that makes it easier to organize the perception of the name and allows the user to decontextualize and isolate it, thus overlapping it with the memory function [13, p. 78] to which it resorts. Thanks to that function, the user is able to compare the input he/she gets from the search engine homepage interface to the image of the Google logo, with which the target audience is familiar thanks to the fact that it is frequently published in the search engine homepage.

According to Martí [11, p. 34], in the case of the Budweiser advergame, the legendary Pac-Man becomes Bud-man; a name obviously meant to remind users of the brewery name. In Google's case, the name of the company was part of the Doodle itself, and took on the morphology and aesthetics of the videogame, as we've already seen; in this second case, though, the reference is incorporated via the acronym 'Bud-Man', resulting from the combination of the words Budweiser and Pac-Man. The references alluded to by the game, in the case of the Budweiser advergame, are based on more complex and sophisticated processes than in the case of the Google illustrated logo. The references in the name are not a visual part of the videogame, but they are indirectly present, via its main character (the original game is called Pac-Man after its main character). The presence of the main character and a proper identification of the character with the name of the videogame are required in order for the player to effectively identify the game with the company.

The ghosts are represented by beer can tabs; the dots or prizes, always present in this kind of games, have been turned into beer bottles, etc. In short, the relation between the aesthetics of the game, the characters, etc, is similar, although in the Budweiser case the adaptation of the characters tends to rhetorically link them to the product via its containers.

From our point of view, Google and Pac-Man went for a co-branding strategy, although the decision to create a Doodle based on the combination of a videogame and the company's corporate

identifier also links this commemorative Doodle to the concept of advergaming. However, in the Budweiser case, the link between the company and the videogame is not as collaborative, because there's more of a general reference to a videogame genre than a specific reference to Pac-Man.

The link between both corporate entities, Google and Pac-Man, was clear after this interactive Doodle was published. Let us also clarify that the above-mentioned co-branding strategy is deployed not only with regard to the company, but also with regard to the product (the Pac-Man videogame) and the service (the search tool) offered. And it's both of them, the product and the service, that bridge both corporate subjects.

The videogame was published in the search engine homepage, that is to say, in the very interface that offers the service. It takes on all of the constant features regarding the publication of Doodles, with which most of Google users are already familiar. This led us to the idea that the reference to the company can be read in different levels.

This Doodle is paradigmatic of users' interactivity with the corporate identifier and it is also good proof of Doodles' ambivalence: they don't let go of their traditional and main function, that of allowing users to identify the company and the search engine, as the logo does; and in addition to that they take on a new function, that of entertaining their audience.

In this sense, the company's decision to take the path towards users' interactivity with Doodles entails a change in marketing communication, a change towards a model that is very similar to the pull model, which is, according to Calvo y Reinares as quoted by Martí [12, p. 92], an advertising strategy in a hypermedia environment where efforts are oriented towards attaining the target audience's collaboration in order to attract them to the contents the advertising company offers.

Apart from the fact that we have never considered Doodles as adverts, but always as corporate identifiers that translate the essence of a company, we deem this definition interesting as long as Doodles are able to operate and function in a different way to that of close images, which are hermetic and traditional, and have thus nothing to do with the challenges the new media environment poses.



Finally, we should point out that the popularity and fame of the old videogame transcends different generations of users, and this fact brings them together emotionally and is based on the spirit of the idea that ‘any past time was better’ from which there’s no doubt Google benefits.

#### 4 · Conclusions

Among our objectives was the determination to unravel the key reasons that led Google to animate its illustrated logo, to find out why they encourage the user to interact with others, or even to explain how they get their users involved and what the company’s main payoff is. We will try to briefly unveil these questions in this section.

Google tries to get the user’s attention and that’s why they use animated and/or interactive images, thus adapting to the current media environment and the new demand for multimedia contents. Audiences are now familiar with the use of different media platforms and animated and interactive contents. Google aims to achieve similar effects to those referred by Norman [14, p. 248] concerning the joy he experiences thanks to Doodles, a joy we believed is shared by many Google users, which proves there’s a need for companies to update their strategies and go for changes in their approaches.

One thing that makes me smile every time I visit their site [Google’s homepage] is how their logo illustration changes depending on current events. They draw an evil look inside the ‘O’ during Halloween, or some snowflakes falling on the logo in winter. I love these things.

The ‘smiles they achieve’ show Doodles have a clear vocation for branding, for they are a sign of the importance of what the brand can mean for the audience, how the interpret and assess it [15, p. 97].

We have no intention whatsoever of getting branding mixed up with corporate visual identity, but the success of the strategy is mainly a result of how, through Doodles, designers transmit affection and emotions that are invaluable regarding brand value management. Their skillful use of visual language and their symbolic translations of the essence of the company and its ideas and values into images transcend the limits of verbal language,

and give visual language a prestige, long claimed by professionals in the field, as an inestimable mean to achieve objectives in many different areas. Despite that, according to Doug Edwards as quoted by Girard [16, pp. 171-172], he himself and other marketing professionals advised against the illustration of the Google logo. The company’s founders were real visionaries and went for this formula, despite their careers having little to do with marketing and advertisement. Their decision led years later to a success that proved key to the company from the point of view of branding. Most recent Doodles include certain improvements regarding the interest they arouse in users and the time they manage to keep their attention as compared to static Doodles. Animated Doodles length ranges from just a few seconds up to a maximum of around two minutes. Some interactive Doodles don’t have a limited length, on the contrary they can last for as much as the user wants them to or as much as the proposed interaction for planned action is supposed to, depending also on how many times the user wants to repeat it. The Pac-Man Doodle, for instance, allows the user to play as many times as he/she wants to. Stretching the time users stay on the site, while they are facing the corporate identifier, strengthens without a doubt the memory function and its life in users’ minds.

The audience’s involvement is strengthened by the different connections that are established with users, aiming at creating an emotional bond. That is the case, for instance, with allusions of celebrities or fiction characters in Doodles, widely known and positively accepted by a large part of the public. As a result of the user’s liking of the commemorated figure, an attachment is created, which strengthens the user’s bond with the brand. To end with, let us add that the use of interactive/animated Doodles could be determined, in our opinion, by an organization’s decision to pursue the objectives dictated by marketing communications as explained by Martí [12, p. 89]; these objectives focus on the search for innovative formulas that allow the company to effectively reach the users, avoiding publicity saturation. The aim is to build messages that involve the users through interactivity.

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## ARTISTIS-DESIGNERS OF THE TWENTIETH CENTURY

## A semiotic inventory



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## Abstract

This study presents the relationship between semiotic Art and Design, the creative actions perceived - of signs and materials - four emblematic artists of the twentieth century visual culture, namely: Pablo Picasso, Francis Picabia, Salvador Dali and Andy Warhol. The evolution expressive of their artistic careers in confrontation with the everyday culture, brought them closer - so inventive - the doings of the functional design.

## Keywords

Art-Design Relations;  
Creative Processes;  
Production Processes;  
Semiotics; Visual Culture.

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## 1 • Introduction

This research intended to create devices that could reflect methodological so theoretical and practical about creative relationships, and materials of signs between Art and Design - the establishment of a historical-critical relationship, supported the Theory Semiotics. We know that the twentieth century was prodigious in the dialogue between the spheres of culture and everyday life. A century of isms and so many ways to define and present the artistic object approached the artists - beings of aesthetics - of the factory workers - beings of production. Artists moved between creative new attitudes, new solutions and new materialities aesthetic and usability. Then, the artist-designer lends his talent to the definition of functional objects - as regards the circulation of ideas-ways. The semiotic knowledge invested in language generation and production of fashion, describing the ways in which semiosis act in favor of retaining the expressive character and consolidation of productive character. The semiotic knowledge helped us also in defining the research methodology - that ambition, beyond the axis identification of four artists-designers studied, giving a critical reading of this production, revealing creative methods, modes of production and functional determinations. Pablo Picasso, Francis Picabia, Salvador Dali and Andy Warhol were artists-designers studied.



## 2 • Methodology

In ambition of studying to understand the relationship between art and design in the twentieth century - to extract the dialogue between the artist and deliberate creativity applied functionality set designer was necessarily a complex methodology and meta-creative, namely research and production biographies artistic techniques and paradigmatic of the names in the cultural

landscape of the twentieth century; visual cataloging of products springs tangential beams between artistic creation and production design; semiotic analytical parameters (the autonomy of the structural elements of visual language), perceived as definers of loved expression and form.

The creative design of the research triggered a continuous record of the stages of research:

- 1) Involvement with basic semiotic readings - investigative auxiliary fields.
- 2) Evaluation attentive modes of classification - which refers to the fields of language and materiality.
- 3) Historical Research - Biographical and Artistic - the names of the interface defining art / design in the last century.
- 4) Research Review - Expressive / formal and functional - to determine relevant search visibility.
- 5) Definition of research products, with a view to disseminating the results.

## 3 • Results

The intent to make knowledge semiotic increasingly applied, were proposed references to interdisciplinary studies between Art and Design, namely: Pablo Picasso Ceramics and Design; Francis Picabia Experimental Typography and Design; Salvador Dali and Jewelry Design, Andy Warhol and Design Pictures.

**F1.** Jacqueline with Flowers, 1954 ; Women, 1953; Three women at the well, 1939 / Head of woman, sd

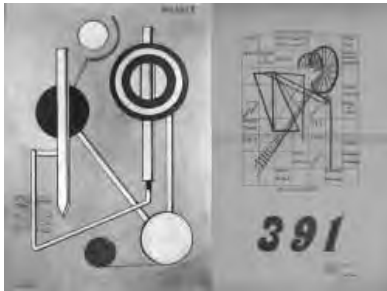


Picasso, multiple artist, spent most of his time to creative doings of pottery. First, their consecrated figures painted on plates and vases. Then begins a process of modeling clay to fit the pictorial figures. Remarkable is how much of his painting migrated to ceramics, in terms of form and style.

**F2.** Bird, 1956; Cat catching a bird, 1921



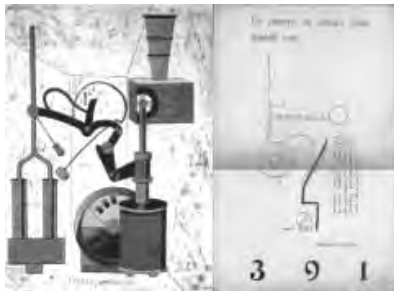
Picabia, Dadaist artist, played strong editorial action. He published two magazines: Cannibale and 391. Observing the printed pages perceive the decisive influence of artistic activity in experimental typographic design. Acted with inventiveness, intelligence plastic with subverting the logic of linear text.



**F3.** Balance, 1919/391 Magazine, 1917

**F4.** Love parade, 1917/391 Magazine, 1919

**F5.** Voila la femme, s.d. / Journal Cannibale, 1920



Dali - between painting and sculpture - acts as a jewelry designer. Enigmatic as his paintings, jewels conceived understood that material wealth (gold and precious stones) and eccentricity topic - applicants in paintings and jewels.



**F6.** Smile, s.d.; Face of Mae West ..., 1934-5; Dream, 1944; Elephant, 1941

**F7.** The persistence of memory, 1931 / Clock, s.d.



Warhol, Pop artist, lent his talents as an artist to the hybridization of media: painting, photography, silkscreen. Having a central figure as the reason for their artistic expression, performed eccentric films and videos in the images captured by the camera were exposed to exhaustion.

**F8.** Liz Taylor, 1964; Experimental movies '60s; Liz Taylor, 1964; Experimental movies '60s





**F9. Marilyn, 1967;**  
**Blow Job, 1964**



#### 4 • Conclusions

Bases of research, knowledge and its semiotic method of creativity and inventiveness - abduction - provided a wealth of products underlying the interdisciplinarity between Art and Design. The confrontation expressive / productive knew extract the actions of artists-designers protagonists of spacetime researched solutions visible knowledge built into the research: were thus generated four portfolios semiotic - all scaled from experimenting with materials and procedures, signical raw and expressive ways - knowing; Picasso originated a portfolio that reinvents ceramic imaging and modular solutions; Picabia provides guidance for setting up another magazine experimental typography that generates in itself, levels of innovation; Dalí determines the production of a contemporary jewelry in a guided figurality organically deforming; Warhol platforms offers image-narratives to the seizure of characters arranged in videos, suitable for its subtleties. The completion of the four portfolios also enabled the determination of double vocation: the need to configure theoretical and methodological parameters for the creation of Art and Design in production - a broad understanding of the artistic culture of the twentieth century; enjoy in levels of improvement, skills materials and techniques - the year of visual language. From origin to destinations creative productive convergence: interdisciplinarity.

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# ANIMAÇÃO 2D

A importância dos princípios básicos



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## Abstract

Apesar de promissor, o mercado de desenho animado no Brasil sofre com a carência de profissionais qualificados. Atualmente a formação desta mão de obra é, geralmente, realizada em cursos particulares de alto custo e o material utilizado, na maioria dos casos, é de origem internacional e em língua estrangeira, buscada também por estudantes autodidatas. Este artigo ressalta a importância dos princípios básicos das técnicas de animação 2D abordadas por algumas destas obras internacionais com o objetivo de servir de base teórica para o ensino desta arte no Brasil e disseminar os conhecimentos básicos afim de contribuir para a aproximação do estudante, muitas vezes autodidata, com esta arte.

## Keywords

Desenho animado,  
técnicas de animação,  
animação 2D.

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## 1 • Introdução

A ampla demanda em usar desenhos animados no mercado midiático em geral pede formação de profissionais qualificados na área. E ainda hoje, literaturas em português sobre o assunto são escassas e, em muitos casos, até mesmo inexistente, principalmente em se tratando de livros sobre técnicas de animação em 2D, que serve de base para aplicações em 3D. Este artigo relata um estudo de livros feitos por uma compilação de algumas das principais referências bibliográficas internacionais que exploram técnicas de animações para desenho animado em 2D. Esta compilação tem por objetivo aproximar o estudante de fundamentos importantes como a manipulação do timing e espaçamento, além de servir de base para que novas metodologias surjam contribuindo finalmente para a disseminação deste conhecimento no Brasil.

Este artigo expõe a lógica por trás de algumas situações citadas pelas referências abordadas pela compilação, confrontando as informações propostas pelos autores das mesmas, de maneira imparcial, com o intuito de clarear os fundamentos do espaçamento e timing para os futuros estudantes. As referências bibliográficas mais citadas neste artigo são: “Cartoon Animation” de Preston Blair, “The Animator’s Survival Kit” de Richard Williams - incluindo suas video aulas, “Timing for Animation” de Harold Whitaker e John Halas, “Gesture Drawing For Animation” de Walt Stanchfield e “The Human Figure in Motion” de Eadweard Muybridge.

## 2 • Referências sobre animação

The Animator’s Survival Kit [10] é um dos livros indispensáveis para qualquer pessoa que queira se tornar um animador. A introdução comenta que Milton Erwin Kahl, animador da Disney na chamada era de ouro da animação, afirmou que não achava possível existir um bom animador sem que, primeiro, ele não fosse um bom desenhista.

*“Você tem que saber toda a coisa, sabe? Conhecer a figura bem o suficiente para que possa se concentrar no personagem, nas diferenças, por que este personagem é diferente de outro. É preciso ter o conhecimento para caricaturizar na direção certa e enfatizar as diferenças da forma correta” [10]*

No mesmo texto, a afirmação é acompanhada pela de Arthur

Harold Babitsky, animador da mesma época de Kahl e também da Disney:

*“Se você não sabe desenhar, esqueça. Você é como um ator sem braços e pernas. Mas nós podemos aprender a desenhar. Há o mito de que você nasce desenhista ou não. Errado! Obviamente, talento natural é de grande ajuda e o desejo é essencial, mas desenhar pode se ensinar e se aprender” [10]*

Frederick Bean Avery, primeiro diretor de Pernalonga, complementa:

*Eu nunca fui um grande artista, então porque lutar contra isso? Seguirei outra rota. E estou feliz que o fiz. Aproveitei muito mais do que teria aproveitado se ficasse apenas animando cenas por toda a vida” [10].*

Essas afirmações demonstram pontos de vistas diferentes sobre a necessidade de saber desenhar para se tornar um animador e que esta obrigatoriedade não se aplica tanto para animadores de computador, ou seja, “animadores que trabalham com marionetes virtuais” como disse [10]. O autor atenta ainda para a falta de treinamento formal e de como o conhecimento sobre os movimentos, desenvolvidos pela Disney em sua era de ouro, estão se perdendo. E este talvez tenha sido o principal motivo pelo qual o levou a escrever seu livro: passar o conhecimento que está se perdendo.

No item The Graduate, [10] diz que bom desenhista em animação não é aquele que sabe copiar superfícies. Bom desenhista compreende e expressa. Animação requer interpretação da realidade, acentuação e supressão do personagem para torná-lo vivo. Para se conseguir esta desenvoltura, os movimentos têm de serem confiáveis, e isso exige, além de outros, o estudo estrutural da figura humana ou animal.

Precisamos saber sobre a realidade para a distorcermos  
*“Atente para o fato de que os animais nos desenhos animados são construções mentais. Mickey Mouse não é de fato um rato. Ele é mais um palhaço de circo do que um rato. E isso tudo é importante saber para que nossa estilização se dê no caminho correto” [10].*

Nota-se, por tudo isso, uma preocupação em ensinar os fundamentos para se fazer movimentos confiáveis aos olhos dos expectadores. Esta preocupação casa com a preocupação da compilação proposta pelos autores deste artigo, pois a mesma visa

a disseminação deste conhecimento no Brasil, aja visto que cursos de qualificação na área ainda são escassos no país.

Diferentemente da referência anterior, *Timing for Animation* [9] desde o início do primeiro capítulo, aborda o passo a passo da logística que existe por trás de qualquer produção de animação, já nos enquadrando em um cenário de mercado, apontando para a importância da clareza e boa composição das cenas, além do *Timing*, fatores que contribuem para o sucesso de uma animação. Esta abordagem se assemelha com o perfil dos cursos oferecidos no Brasil que focam a formação técnica a fim de suprir uma demanda obediente à dinâmica do mercado. Aqui o conceito da obra é diferente do de [10] e pode ser descrito pela observação abaixo:

*“A boa leitura de uma ideia depende de dois fatores: clareza e boa composição, para que as cenas sejam apresentadas da maneira mais eficiente, além de um bom Timing, de modo que um bom tempo é despendido preparando o público para algo que vai acontecer, para em seguida termos a reação da ação”*[9].

Para julgar corretamente esses fatores, a introdução do livro enfatiza que é preciso ter um bom conhecimento sobre como a mente humana reage ao se sujeitar a uma história e ilustrou o problema destacando que, para um público infantil, a cena tem de ser cronometrada de maneira diferente de um entretenimento que foque um público adulto e tudo isso tem de ser pensado no *Timing*.

A introdução olha também para os custos de uma animação. Afirma que animar custa tempo e tempo em animação é custa caro, por isso não se anima mais do que o necessário. Não se anima um tempo de cena que pode ser cortado na edição. O diretor tem de prever todas as cenas e os seus cumprimentos a serem animados com eficiência. E já aqui atenta os estudantes para as leis do movimento na natureza.

No tópico sobre *Timing* (What is a good timing?- o que é um bom timing?) é citado:

*“O tempo é a parte da animação que dá sentido ao movimento. Pode ser alcançado elaborando duas posições diferentes e então ir inserindo um número de outros desenhos entre elas. O resultado disso será o movimento mas não a animação. “ Diz-se que na natureza o corpo não apenas se move, mas se comporta”*[9].

Para ilustrar esta afirmação usa-se o exemplo de que podemos desenhar um círculo e declarar que ele é uma bola de canhão ou de sabão. O público só os diferencia quando ambos se movem e interagem com o ambiente, e daí se comportando como bola de canhão ou de sabão.

Ainda há a menção sobre Isaac Newton e sua primeira lei do movimento: “as coisas saem de sua inércia se uma força agir sobre elas. Assim, o movimento é causa secundária, portanto é vital enfatizar a ação que expressará as causas subjacentes do movimento.

Como disse [9], a complicação com objetos inanimados essas causas podem ser forças naturais como a gravidade. Com personagens, as mesmas forças podem causar contrações musculares, expressões faciais. Além da razão estrutural anatômica para o movimento, pode haver a razão psicológica, como ameaças, provocações, acontecimentos. Um animador tem de se preocupar com os gestos de seus personagens, com desenhos de imponderabilidade, mover sólidos e tornar sua ação convincente. Isto prova que o *Timing* é de importância primordial.

Em outra referência, *Cartoon Animation*, [1] não temos introduções. A edição foca em exercícios de estilização de traço e estudos de elaboração de personagens, aplicando esquemas para anatomia e estruturas humanas e animais, mostrando de peito aberto sua opinião sobre o fato do animador ter de saber desenhar para animar, aja visto que, a obra sendo uma coletânea de textos publicadas pela primeira vez em 1946, saber desenhar era uma propriedade inerente para quem quisesse se tornar um animador. Após esta etapa, inicia o estudo de linhas de ação, de desenhos gestuais e suas aplicações em pequenas animações.

Após “treinar” o desenhista e inundá-lo de teorias sobre técnicas de movimentos com exercícios e exemplos (a versão em PDF contém exemplos animados), [1] em seu último capítulo – Técnico – finalmente aborda os fundamentos da boa animação, assim como a parte técnica de produção, traçando um panorama geral para se fazer uma animação. Seu texto é mais próximo ao de [10], treinando o leitor, colocando-o a parte dos fundamentos dos movimentos e então, com a parte técnica e então o tornando apto para entrar no mercado. Embora o livro seja sólido e feito por um animador advindo da era de ouro da animação, o livro foca o estilo



cartoon dos anos 40 e pode ser difícil para alguém que tenha já se adaptado a outro tipo de traço compreender os princípios subjacentes. O livro é para o leitor como um professor, que orienta um aluno inexperiente.

Finalmente temos *Gesture Drawing for Animation* de [8]. Esta referência pode servir de suporte para todas as anteriores. Sua linguagem se aproxima à de [10]. Mais uma vez parece que se tem um amigo, experiente na profissão, orientando um novato. Em sua introdução, [8] comenta sobre seu início de carreira, sobre como começou, sobre como foi instruído e sobre o fato de admirar pessoas que não tem vergonha de pedir ajuda. Comenta ainda sobre os motivos que o levaram a querer passar seus conhecimentos e sobre sua convicção de que com perseverança e determinação qualquer um que aprenda os fundamentos da animação, qualquer que seja o papel que desempenhará em uma produção, os fundamentos a serem aprendidos pelos animadores são os mesmos, pode fazer parte deste mercado. E então expõe o foco de seu livro – o desenho gestual para animação. [8] explica seu motivo de abordar este tema:

*“Tenho me concentrado no desenho gestual porque este é um dos fundamentos da boa animação, que precisa de desenhos estilizados, com linguagem corporal, perspectiva, entre outras características que serão isoladas e discutidas”[8].*

Logo, este livro, publicado antes dos citados anteriormente, serve de suporte para todos, pois o desenho gestual melhora a estética dos esboços, facilitando na captura da essência dos movimentos, tornando-os mais confiáveis, um dos pontos tocados por [10] sobre a importância da veracidade do movimento. Para alguém que queira aprender com [1], este livro pode auxiliar a melhorar seu desempenho como desenhista. Para alguém que prefira a linguagem matemática de *Timing for Animation*, este livro pode auxiliar a absorver melhor os exemplos apontados e, para quem se adapte à didática de [10], [8] é mais um amigo experiente a tentar orientar um futuro animador, as didáticas dos dois se encaixam. Embora [10] também auxilie o leitor com dicas de desenho, seus exemplos focam os movimentos e não a qualidade dos mesmos. [8] aborda o tema de desenho gestual auxiliando tornar o leitor capaz de por em prática a didática de [10] em qualquer situação de movimento, pois o leitor, com suas instruções, estará

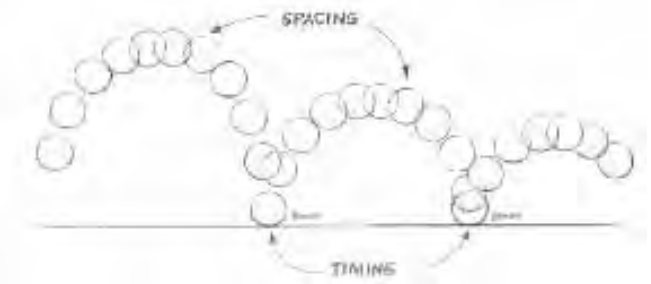
mais perto de desenhar qualquer tipo de movimento.

## 2 · Princípios Básicos da Animação – Tempo e Espaçamento

O capítulo *It's All The Timing and The Spacing* [10] contém uma grande lição que o autor recebeu no dia em que conheceu Grim em Hollywood. Com quase oitenta anos, Grim era o mais velho dos animadores e animara 83 cenas de *A Branca de Neve e os Sete Anões*. Naquele dia, Grim lhe disse: “Animar é uma questão de tempo e espaçamento”. [10] então discorre sobre os segredos do aprendizado desta arte cada vez mais valorizada e explorada que é a animação 2D.

As duas variáveis fundamentais da animação são: tempo e espaçamento. Para ilustrar o conceito, o autor nos mostra o exemplo da *Bouncing Ball* ou *Bola Quicando* (Fig. 1), usado no início de muitos cursos de animação pelo fato de ilustrar com eficiência esses conceitos fundamentais citados por Grim.

No exemplo, o autor nos diz que os ‘boinks’ marcam onde a bola bate no chão, ou seja, os pontos de impacto, os momentos das ações, definindo assim o ritmo para as coisas acontecerem, ou o timing da ação.

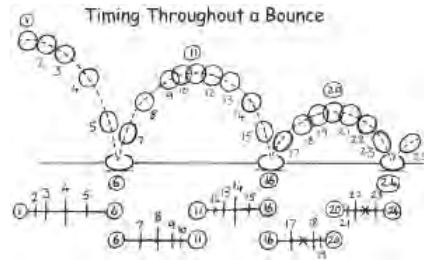


O espaçamento, finalmente, está nas sobreposições da bola no arco que forma a parábola que dá o rastro do movimento. Como visto na (Fig. 2), no alto, onde os desenhos se aproximam marcam onde movimento é mais lento.

Na queda, o espaçamento aumenta assim como a velocidade do movimento, então, espaçamento é o quão perto ou longe os desenhos estarão uns dos outros. É simples, mas importante. É a

**F1.** The animators survival kit- Richard Williams.

parte complicada e o que define uma boa animação de qualquer cena, pois controlando o espaçamento controla-se e manipula-se o movimento.



**F2.** The Mechanics of Motion - Webster, C.

Complementando a explicação o autor comenta que para gerar um movimento natural, nas figuras acima, faltam um frame desenhado entre os desenhos 5 e 6. Este desenho estará na iminência do contato com o chão, algo que quebre a continuidade do movimento como na (Fig. 3).



**F3.** The animators survival kit- Richard Williams.

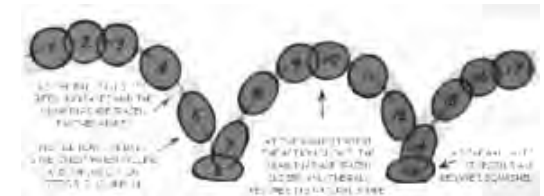
Note também que, quanto maior a velocidade mais alongado é o desenho. Isto é uma questão de física e acontece na queda e no arranque de subida, onde a aceleração é maior nos dois casos. A referência também observa que, na queda, quando a bola está para se chocar com a superfície, o desenho alongado está na iminência, no ponto correto. Mas na subida, no momento da arrancada, não temos um frame desenhado entre as posições 13 e 14, o que nos dá, depois do choque e da contração do corpo que o faz acumular energia potencial elástica, a bola no ar logo no frame seguinte, não tendo um desenho na iminência do corpo perder o contato com o chão (Fig. 4). A forma correta para esta animação é representada na (Fig. 5)

**F4.** The animators survival kit- Richard Williams.



**F5.** The animators survival kit- Richard Williams.

Este pequeno detalhe, explicado acima, corrige, segundo[10], um erro contido no livro de [1]. O capítulo 2, no item The Basic Bouncing Ball Action, trata do mesmo exemplo, porém, em sua ilustração, [10] não acrescenta os frames entre as posições 5 e 6 e entre 12 e 13(Fig 6). O autor relata não querer constranger o autor de Cartoon Animation, mas sim aprimorar o conhecimento passado. Porém ressalta também para o fato de que muitos outros livros escritos nos dias de hoje contêm esses tipos de erros de conceito.



Um exercício que faz experimentar as variáveis fundamentais desta arte sem nem sequer fazer um único desenho pode ser:

- 1) Trace uma linha de tempo de 25 centímetros, graduando-a e circulando os números 1, 13 e 25, respectivamente o início (1), o meio (13) e o fim (25).
- 2) Em seguida tire fotos de uma moeda pousada nos espaços aleatórios indicados pelos números.
- 3) Por fim, sobreponha as imagens, formando um vídeo e aperte o play. Faça este experimento abordando diferentes espaçamentos.

[10] ainda ressalta que, escondidos neste simples exercício, estão implícitos idiossincrasias sobre a matéria que constitui o objeto animado: Do que é feito a bola? O movimento é rápido ou lento? Se é pesado ou leve, entre outras. E isso tudo surgirá se fizermos vários testes de espaçamento com este exercício. Aí a importância do tempo e do espaçamento se torna evidente.

**F6.** Cartoon Animation - Preston Blair.

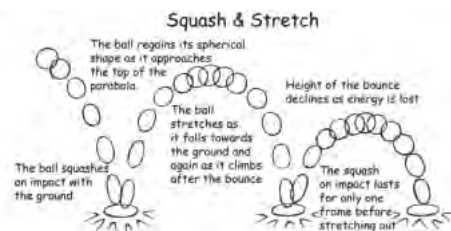
Estes fundamentos ainda serão determinantes, não importando a qualidade do desenho. [10] afirma que ainda serão determinantes, mesmo se os desenhos forem feitos por Da Vinci ou Michelangelo. A matemática do espaçamento e do timing são propriedades inerentes da arte de animar.

O ser humano tem uma capacidade natural para o sincronismo, mas tem-se que aprender sobre o espaçamento (Fig. 3) das coisas.



F3. Siddhartha Ahearne: <http://www.sidahearne.com/p/animation-tips.html>

O exemplo da bola quicando é, muitas vezes, usado para mostrar a ação e reação no corpo animado, isso diz respeito à deformação da bola (Fig. 4) durante seu contato com o chão nos instantes da queda, no tempo que dura o impacto e na subida – pós-impacto. Pois aqui, sendo objetos inanimados em movimento, valem as leis do movimento descritas por Isaac Newton.



F4. The Mechanics of Motion - Webster, C.

Na queda, a bola se alonga, no impacto ela se achata e, na menor parte do arco da parábola, já na subida, retorna ao seu formato natural. O efeito se tornará exagerado com uma bola muito macia, mas quase imperceptível com uma bola de golfe por

exemplo. O mesmo efeito acontece com um salto de um ser animado (Fig. 5).



Veja a similaridade no alongamento da perna do homem e dos braços do sapo com o alongamento do personagem que caia do penhasco. Em resumo: alongar o último frame até a superfície de contato aumenta o impacto do movimento, ou seja, acrescenta movimento ao movimento.

Note que essas regras seguem a física de um objeto inanimado em movimento. Alongar a bola na queda, quando sua velocidade é alta, achatá-la no momento do impacto, tudo isso obedece as leis do movimento estudadas na Física, mesmo de ensino médio. Animar objetos inanimados é retratar a realidade, obedecendo as regras de movimento que nos cercam no dia a dia. No exemplo da bola quicando temos Queda Livre, estudada pela Cinemática, vemos as aplicações das leis de Newton na Colisão da mesma com o chão quando ela se achata e logo em seguida, pela colisão elástica, retoma sua forma natural ao realizar trabalho e converter energia cinética em potencial ao começar a subida de sua trajetória. E é aí, nos boinks, onde as coisas acontecem, que os animadores da era de ouro Disney colocavam sua arte, interpretando as reações e ressaltando as forças e os motivos que resultariam no movimento, exagerado ou não.

John Halas e Harold Whitaker em Timing for Animation elucubram o leitor sobre estes aspectos no item Propertiers of Matter.

Logo no início do item, lança-se a questão sobre o que acontecerá a um determinado objeto quando uma força atua sobre ele em um determinado ângulo e considera, como um dos fatores do sucesso de uma animação, ser importante que esta pergunta seja respondida corretamente, no caso, em imagens.

Os autores observam o fato de que todo objeto tem seu próprio peso, estrutura, flexibilidade e que se comportará de maneira individual perante a ação de uma força qualquer sobre ele e, para

F5. The animators survival kit- Richard Williams.

animar este comportamento, será preciso uma combinação de timing e espaçamento. Contudo, o animador, a fim de dar sentido ao movimento, deve considerar as leis de Newton como informações imprescindíveis para mover o personagem e os objetos ao seu redor. Então o autor ressalta que não é o exagero do peso do objeto que será o centro da animação, mas sim o exagero da tendência do peso, que o fará se mover de determinada maneira. Então, se diz que o timing para uma cena de animação têm dois fatores a serem considerados:

1. O timing dos objetos inanimados;
2. O timing do movimento do personagem.

Em relação a objetos inanimados, os problemas de dinâmica são simples: quanto tempo leva para uma porta bater; quanto tempo para um objeto se mover, entre outros. Com personagens vivos os mesmos problemas ocorrem, pois, o mesmo é feito de matéria. No entanto, o tempo deve ser calculado para englobar questões psicológicas e físicas. O personagem tem de parecer estar pensando se estiver pensando na ação. Este detalhe pode ser que influencie na própria força de vontade e, por conseguinte, no movimento muscular do personagem.

Após isto, o livro se concentra na matemática do movimento, envolvendo toda a física por trás das forças que motivarão um corpo, articulado ou não, a se movimentar. Tais temas serão tratados nos capítulos seguintes a fim de que complementem a metodologia de Williams. O livro *Timing for Animation*, no item *Spacing of Drawings – General Remark*, aborda sobre a questão timing e espaçamento, e ainda assim de maneira matemática. O início do parágrafo ilustra a linguagem cartesiana dos autores quando dizem que qualquer objeto que se movimenta de um ponto de repouso X até o ponto de parada Y tem uma tendência, devido às propriedades da matéria, de, no início do movimento, acelerar até um máximo e então começar a retardar até parar, veja o item A da Figura 6.

Eles mencionam que esta é uma tendência geral do movimento em animação, podendo existir um número infinito de variações como exemplo. Exemplificam que no movimento de vai e volta de um pistão, o mesmo se move mais lentamente nas extremidades de seu movimento, vide gráfico de espaçamento, e assim em animação, os desenhos estão mais próximos nas extremidades

do movimento do que no meio. Ainda ressaltam que este tipo de movimento é chamado de ‘Movimento Harmônico Simples’ (MHS), e exemplificam com o item B da Figura 6, afirmando que esta afirmação pode ser ilustrada através da projeção dos pontos equidistantes sobre a circunferência em cima de uma linha reta.

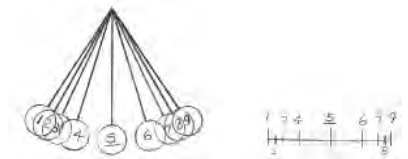
O exemplo acima pode ser definido como movimento harmônico simples, pois é análogo ao movimento executado por uma partícula sujeita a uma força proporcional ao deslocamento da mesma, porém, no sentido oposto.

A equação 1, advinda de Fundamentos da Física Volume 2, 8ª edição, de David Halliday e Robert Resnick e Jearl Walker, mostra esta relação:

$$F = ma = -(m\omega^2)x.$$

Onde F é a força, m a massa da partícula, a é aceleração da partícula, w a velocidade angular e x o deslocamento. Note o sinal negativo do valor final da força F, mostrando que o deslocamento x é contrário a sua atuação.

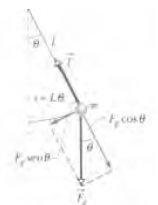
Para entendermos melhor, podemos estabelecer uma relação entre o exemplo do pêndulo simples e o movimento circular uniforme, ambos retratados em animações por Richard Williams. Note as Figuras 7 e 8 que mostram o movimento do pêndulo e o gráfico de espaçamento, respectivamente.



F6. / F7. Richard Williams, 2002

Agora imagine que o ângulo formado pelas hastes das posições 5 e 9 é A. E que o valor de A em graus é menor ou igual 5. Nessas condições o arco, gerado pelo rastro do movimento do pêndulo entre as posições 1 e 9 tende a se tornar a reta da Figura 8, ou seja, o arco terá o mesmo comprimento que esta reta. Sendo assim, projetando o movimento do pêndulo nesta reta, vide os espaçamentos da Figura 8, teremos o gráfico de espaçamento sendo semelhante ao gráfico de espaçamento proposto por John Halas e Harold Whitaker, visto na Figura 6, item A. Colocando as Forças atuantes no pêndulo no instante em que o mesmo se posiciona no desenho 9, teríamos:

F9. Halliday, Resnick, Walker, 2008



Onde Fseno é oposto ao deslocamento, o que daria valor negativo, proposto pela equação 1.

Note então que Halas e Whitaker nos esclarecem para estarmos atentos as leis do movimento ao propormos uma cena animada, sendo ela de objetos inanimados ou não, pois o movimento, exagerado ou não, estilizado ou realista, interpretado, precisa fazer sentido. E a manipulação dessas leis para a criação de um movimento, parte do conhecimento desses fundamentos. Se for objeto inanimado, essas leis da física nos servem de guia para fazermos os gráficos de espaçamento. Se tivermos personagens, cujas personalidades e trejeitos precisam ser interpretados, precisamos nos lembrar de que seus movimentos precisam reagir ao meio que estiverem imbuídos. Por tudo isso, mesmo movimentos sensíveis como os de personagens, devem ser fundamentados de uma lógica física, mas a maneira de fundamentá-los exige malícia de experiência de trabalho. A dica de Richard Williams sobre o movimento da bola quicando ilustra muito bem isso, pois a física é adaptada a uma melhor maneira de ser mostrada ao espectador. Este tipo de conhecimento acentua a importância dos estudantes e futuros animadores de quererem se fundamentar e aprender com profundidade esta arte tão atraente e especial: a de dar vida aos nossos personagens.

### 3 • Considerações finais

Dentre as referências pesquisadas, pode-se constatar que estes livros se complementam. Preston Blair, o professor de idade mais avançada com sua didática objetiva e dura é atualizado por Richard Williams, que expõe sua metodologia de trabalho, e explica a expressão com desenhos que demonstre credibilidade, seja ele qual for o estilo. Este entendimento é complementado pelo segundo amigo experiente, Walt Stanchfield, o qual conduz o leitor a pensar e por no papel qualquer tipo de movimento, em qualquer tipo de traço, em qualquer cena que uma animação exija.

Os conhecimentos adquiridos durante a leitura de *Timing for Animation*, formarão um panorama geral das variáveis a serem consideradas na hora de se produzir uma animação, as quais abrangem desde a parte de técnicas de movimento até os problemas para se atingir o entendimento de um determinado público.

Considerando o principal objetivo da compilação, que é um

primeiro passo para colocar futuros estudantes de animação em contato com referências que abordam os fundamentos desta complexa arte, a exposição dos perfis e metodologias das principais referências bibliográficas da área, afim de que se desenvolvam novas literaturas e didáticas adaptadas à cultura brasileira, é de grande importância para a formação de uma primeira geração de profissionais, em sua maioria autodidatas, que possivelmente construirão os primeiros alicerces para que este mercado se consolide e se potencialize.

Dentro deste contexto, este artigo expõe a lógica e o cenário por trás de uma produção assim como os aprimoramentos e malícias adquiridas por profissionais que dedicaram suas vidas a esta arte, sem ter a pretensão de propor inovações ou alguma metodologia original. A inovação é por si só a iniciativa de difundir e esclarecer conhecimentos até então escondidos da grande maioria dos estudantes brasileiros, seja pelos altos custos de algum curso ou pela língua estrangeira. Há de se ressaltar que num segundo momento, servir-se de base para a criação de uma nova metodologia de ensino, que confronte então possíveis erros, como os que Williams observou em relação à publicação de *Cartoon Animation*, é o caminho a ser seguido pelos futuros acadêmicos interessados.

### 4 • Agradecimento

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## ANIMATED FILMS IN THE CLASSROOM USING DIGITAL TOOLS

Three pedagogical projects



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### Abstract

The purpose of this article is to explore the possibilities of introducing animation, a working pedagogical project, as a method of teaching and learning in both formal and informal contexts. "Teaching" through projects involving different school subjects makes learning more meaningful to the students. Using digital resources brings the pedagogical act into the 21st century, massifying technical processes which were impossible or difficult to work with until some time ago. This is the framework for animation, as a centenary art, to enter into the classroom adding constructivist guidelines to modern working tools. In this article we present and describe three pedagogical experiences developed as projects with school children in formal and informal contexts. What the projects have in common is the use of animated images in making a film, and the exploration of a very traditional art form using pioneering technology, always bearing in mind concerns for artistic and technological education but never forgetting all the other subjects, for interdisciplinarity plays a key role, too.

### Keywords

Animated films;  
Education; Project  
methodology; Digital tools.

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## 1 · Animated films as a pedagogical working project

Animated films have always caused fascination and familiarity among young people. Using these stimuli as educational potential is an advantage in redesigning a fresh educational practice that may supply each student with the ability to build his/her learning in an appropriate and motivated work environment. For us, animated films are viewed as an artistic language that enhances visual communication, allows the building of knowledge through interpretations and experiences, develops perception, imagination and critical thinking.

Implementing such type of task as a Project [1] implies being concerned with allowing students to absorb significant learning not because the educational system determines it, but because there is a sense in what they learn. Promoting learning through working projects is a proposal by Hernandez [2] which renews Dewey and Kilpatrick's ideas, questioning the way schools are organized still today.

When we think in applying the project, we immediately reject the chance of a continuous and repetitive action. The project should arouse the children's curiosity into new knowledge, and it is up to the teacher to offer the didactic treatment all through the process working in such a way that the different phases and activities help the children to develop their awareness on the learning process [3]. According to this idea, we reinforce the concept of learning through projects in the student's cognitive, affective and psychomotor development. It is also important not to forget that the project should be innovative and renewed when compared to the traditional teaching practices.

The choice for animation comes from the fact that we teach Visual and Technological Education and Plastic Arts. All over the years we have concluded animation was not particularly taught in the classroom. That is why we intend to explore it in an educational context, to promote this technological and artistic language and to diversify and renew teaching and learning experiences [4]. This kind of task implies the manipulation of different materials, their reuse and their transformation. Capturing images, choosing the frames and angles, the visual narrative sequences, all this contributes for a greater number of approaches within the visual and technological arts [5].

On the other hand, we can understand why they were not so common in the classroom up until now. Animation, as a traditional artistic technique, involves rare and very expensive tools and materials. That was the reason why the few experiences in classroom were confined to building some optical toys. In this sense, the didactic of moving images plays an important role in this process creating awareness about the real value of the student's learning development; in this particular example, the focus is on the Project where the use of computers by children can be an excellent mediator to the children's expression, for computers facilitate the way they represent their images, or, in this case, their moving images [6].

## 2 · Digital tools in the didactics of moving images

With the introduction in Portugal of the Technological Program for Education, schools were equipped with the right conditions to really implement and use the Information and Communications Technologies in the classroom, either because of the acquisition of computers, projectors and interactive boards, or because of the appearance of digital tools on Web 2.0 and free software that allow teachers and students to have an easier approach to the concept of moving images and its didactics.

Technologies and Internet came to stay in schools, and they are becoming more and more a factor of union and presence. In the field of the Arts, just like in the Didactics of Moving Image and Animation Films, the number of teachers who are able to explore the concepts of moving images and who also direct films with their students is increasing, mainly due to the technical facility and the existing resources. Today, thanks to the enormous amount and quality of the available (and free) digital tools to approach the topics related to moving images, there are, in the Arts field, many well sustained projects enabling children and youngsters a huge development of their specific abilities in this domain. In other words, the integration of digital tools supported by the Web 2.0 and the new software have conceded a more intense work in the area of Animated Cinema, as a substantial part of the Arts curricula, in truly harmony between the so-called "traditional" supports and the digital ones [7], letting students have an assertive work, either in the use of the tools, or in their selection and

importance in each specific context [8].

In this context of moving images projects, it is relevant to conclude that the use of traditional supports blended with digital tools is enriching and meaningful, not only because of the nature of the subject and its learning richness, but also because of the diversity and wide range of experiences and the pleasure of discovering. Also, there's the fast development of Web 2.0 tools and open source or freeware software. Besides, Internet changed from being a means of transmitting information into a platform of collaboration, transformation, creating and sharing contents [9]; it changed the way we reach information / knowledge and the communication processes either between students, or between students and teachers, both in formal and informal situations [10]. In these projects we tried to fight against these difficulties and even to smooth the traditional model centered on the teacher and also tried to establish open, participative and collaborative approaches [11], using digital supports. Walling [12] points out that computers connected to the Internet in an arts classroom can only enrich the experiences in the visual arts and stand for a precious resource for these teacher's job.

### 3 · Three pedagogical experiences

We now introduce three projects that we think represent possibilities to respond to the actual educational context through renewed and dynamic strategies, in both formal and informal teaching and learning environments.

#### 3.1 · Project 1 – Felicidade/Happiness

The animated film: Felicidade – Happiness, was directed in a formal learning context, within the Projecto Curricular de Turma (Project Class Curriculum) of class A, 6th grade, in Escola Básica de Vilar de Andorinho, during the school year 2011/2012. Because it was a Project developed in a formal learning context, it was driven by the national curriculum for the 2ºciclo do Ensino Básico (2nd cycle of Elementary Education) particularly for the 6th grade, and part of the Project Class Curriculum.

The “Projecto Curricular de Turma”, or Project Class Curriculum, is a concept which derives from an Act of Parliament- Decreto-Lei 6/2001, 18th January – which regulates school's

management and which foresees the execution of a Project where teachers and students are all involved in such a way that learning becomes a gathering of interdisciplinary experiences. Such was the idea behind this project: to involve all the teachers from different subjects.

The theme of the project, “À procura da Felicidade” or “Looking for Happiness”, is part of “À procura de mim no mim no meio dos outros”, a program from the 1st edition of an Animation Film Contest for Children, at the Avanca Film Festival (<http://goo.gl/Da38y>) and Sharp – a platform for sharing and representing (<http://goo.gl/Pm7uK>). The project was designed to be a collaboration between different school subjects and several learning domains (affective, cognitive and technical).

The year before, a similar project had been successfully developed, also with a 6th grade class, but designed only for the Visual and Technological Education lessons. But the success attained encouraged the repetition this year, although with a different, wider and more ambitious approach.

We started by one of the aims of the initiative: to stimulate the reflection by children and adolescents (mediated by teachers) on what the main goal of human people is – to find happiness.

The first step was to contact the organizers of the contest, in order to get more information to include in the Project Class Curriculum. The feedback was very positive and one of the persons in charge, Cláudia Vaz, came to school and presented the project and the contest to the class and she also answered all the questions. This meeting took place on 17th November 2011 in a Visual and Technological Education lesson.

The first conclusion is that the work transcended the technical questions related to animating images, so a great portion of time was devoted to the interdisciplinarity part of the project. The Civic Education lessons were most important for debating the different conceptions of happiness.

Therefore, the use of the audiovisual language of animated films came up as a creative way to represent the conclusions attained after reflecting on the topic.

The technical work of animating images only started on the last term of the school year. Towards the different “status” of happiness of each student, we decided to develop a narrative through



sentences by the students that described their idea of being happy. These sentences were then “illustrated” by moving images related to them.

To approach the principles of moving images, we prepared a small animation experience using pixilation for we consider it to be an easier concept to be assimilated by the students.

We then started to make optical toys, which accompanied the process of capturing images; but this will be referred to later. To capture the images we prepared a small space, with access restrictions, inside the classroom. We set up the computer and the webcam. We used some conventional lamps as light, and the need to capture horizontal images, forced us to improvise a structure that would work as an animation set display.

The students formed groups according to their similarities depending on their concept of happiness, so that they could work together. A sketch of what was going to be animated was drawn, as a kind of storyboard. It was then decided that the film would use mixed techniques, so each group would use a different one according to the examples shown by the teachers. It was then time to build the characters, the movie set and to start capturing images.

There was no defined order for capturing the images; as soon as a group finished creating the characters and the sets, they would then take the pictures. All the groups were busy and active, either building the characters and sets, or capturing images, or making the optical toys.

**F1.** Image capturing set.



This method was the solution we found to work with a group of twenty-eight children. However, we also noticed that the children were permanently changing ideas and information among them,

while going through the different processes.

This phase of the project took us fourteen sessions of ninety minutes; if we add to that the number of sessions devoted to prepare and conclude the project, it makes eighteen sessions, that is, the whole third term.

Because this was multidisciplinary Project, it is important to refer that the script was developed in the Portuguese lessons, the soundtrack was composed and recorded in the Music Education lessons and in the English lessons the students translated the script and wrote the subtitles for the films.

The final result can be seen on: <http://goo.gl/pCbII>

### 3.2 · Project 2 – The white-nosed little monkey

“The white-nosed little monkey” was the result of an informal educational situation. The proposal was to direct an animation film in a summer workshop in Academia de Música de Espinho, during july in 2012.

In 2010 a similar experience had taken place there, for the first time, with the collaboration of Cinanima, the International Animated Film Festival of Espinho. The final result of this experience was the short film “O Gato e o Escuro”.



**F2.** Final audition, screening of the animated film.

The main aim of this project was to combine, in the same creative work, music and animation. This way, it was decided the

animated film would be silent and then the children would create the soundtrack in a workshop specifically designed for that. The final result would consist on a kind of audition where the children would sing during the screening of the film.

Twenty six children, aged between six and thirteen, participated and directed this short film.

The script was adapted from the short story “A lenda do tambor africano”, by Manuel Ferreira, from the book: “No Tempo em que os Animais Falavam”.

The technique chosen was cut-out animation, using only black and white, in an attempt to find some resemblance with Chinese shadow puppetry. The image was captured in stop-motion, the most adequate technique to this age group.

The workshop was organized in six sessions of three hours each; half for working the animation, half for working the music. In the first session there was the need to present the principles of animation and some techniques through the screening of some films. Then, each child explored the idea of moving images by building optical toys (namely the phenakistiscope and a flipbook) which were used throughout all the sessions.

The storyboard was decided by the whole group and then the building of the characters and the card sets began.

The remaining sessions were devoted to capturing images using a webcam connected to a laptop.

At the same time, there were the sessions devoted to compose the music for the film, which was also very positive to enable the changing of ideas and to reflect on the project. In the final presentation, which took the form of an audition, the film was screening in the Academia’s Auditorium and the children sang a cappella.

The final Project can be seen on: <http://goo.gl/lBzeJ>

### 3.3 · Project 3 – The Friendship Song

This last Project was very similar to the first one, Felicidade/Happiness. “The Friendship Song” was also developed in a classroom context, within a 6th grade class from Escola Básica de Vilar de Andorinho, during the school year 2011/2012. However, the origin is somewhat different for it came as a proposal by the Music Education teacher. The main objective of the proposal was to create

an environment (accessories and settings) to present “The Friendship Song” at the end of the school year.

From this proposal and from the meetings that followed it, the idea of directing a film to illustrate the song came up naturally. The film would be screened at the same time that the class, in the form of a choir, would perform the song.

Therefore this Project reflects the inter and multidisplinary between Music Education and Visual and Technological Education.

The methodology used did not vary much from the Project 1 - Felicidade/Happiness; besides, both projects used the same amount of time to be developed. The main difference between them was the characteristic of this particular class, which had only twenty children and two of them requiring special educational needs.

The technique used this time was clay modeling.

The resources were also the same used in the previous activities: a webcam connected to a computer. For the lightning, conventional lamps were used and, some improvisation was also helpful; once, the projector worked as a lamp too. Because the images were captured vertically, only a tripod was necessary. The work began with the exploration of an animation concept through a pixilation exercise .



Then, we analyzed the features of the script, in this case, the song that we were supposed to illustrate. We organized the children in pairs and each pair chose a character.

It was decided that the film would consist of different characters dancing to the sound of the music. However, due to the

**F3,4.** Shooting images for the film.

restrictions in terms of time and the impossibility to shoot two thousand photos (bearing in mind the length of the song) and the chosen technique (clay animation takes a lot of time because it involves a lot of modeling), we decided that the characters would perform cyclical movements so that we could repeat the movements continuously in the editing process.

To complete this Project took us eighteen sessions of ninety minutes, which corresponds to the whole third term of the school year.

The work was complemented with the making of optical toys. In this case the theme was to create an animation cycle in twelve images which represented the dancing of each one of the characters from the film.

The final result can be seen on: <http://goo.gl/Sxy3a>

The final performance is available on: <http://goo.gl/LYKMq>

### 3.4 · Optical toys

In the three projects, at the same time that we were shooting, the children were also making optical toys. This strategy became necessary due to the number of children in the classroom, but also because it enables a better understanding of the principle of persistence of vision .

When working with large groups, and in order to keep them busy, the solution would be to have several image capturing sets, with the right equipment, which would mean several computers and cameras. This is really difficult to achieve in Portugal at the present date. However, even if it were possible, it would be impossible for the teacher to accompany all the work, for we are talking about children who do not dominate or know the techniques in question.

Besides, we believe that exploring the principles of animation to be quite important; through these optical toys the children learn better than through a simulation in a computer because with the toys they get a physical perception of the phenomena. So, although the digital tools are very useful, there is something missing, such as touching the materials of this art form. We think that, by promoting the optical toys, we are compensating what we miss if we used the digital tools exclusively [13].

## 4 · The digital tools

We need specific software in our computers to capture the images for animation films. Most software used by professionals is too expensive to be acquired by teachers or even the school, and they are also too complex to use in an introduction to animation. So we chose to use free tools in the three projects:

In projects 1- Felicidade/Happiness and 2 – O macaquinho de nariz branco / The white-nosed little monkey, we used Monkey Jam. Monkey Jam is a free software designed by Dave Perry© which enables the production of animation films using any technique, in an easy way, very adaptable to every context and which does not need a lot of resources to be developed. Its use in the classroom is extremely simple.

This application is designed to let us capture images from a webcam, camcorder, or scanner and assemble them as separate frames of animation; it can be used for stop-motion or to assemble images previously captured in a timeline. It can also import images and sound files from our computer. It is the ideal tool for these projects and the movies created can be exported as AVI files. In Project 3- Canção da Amizade / The Friendship Song, we chose AnimatorDV, another specific software for creating stop-motion and time lapse animation.

Designed by Wroblewski Multimedia©, its use is more complex than MonkeyJam, but, on the other hand, it allows more options, such as a layer viewing (it provides more precision in modeling the movements); it is a time-lapse tool, meaning that each picture or frame is visualized at a much slower pace than the film; it reads RAM files (audio files created by Real Player); frame averaging (a technique that consists in introducing more data in the images and to reduce noise); and, at last, the movies can also be exported as AVI files. This software is very simple, intuitive and it can be widely explored in the classroom.

Plastic Animator Paper, or PAP, was used in one of the scenes from the film Felicidade/Happiness – project 1. This software is easy and efficient for drawing traditional animation in a digital way, but it requires an interactive board or a tablet in the classroom. So, in spite of being free, some of its requirements are not always possible or affordable.

Though this software is a little more complicated to work with

than the previous ones, it contains a lot of very developed and useful tools for drawing and editing, we can create several settings and layers, key frames and other functions that require some time to learn.

## 5 • Conclusions: Screening and publicizing

In our opinion, screening the films the children made and publicizing them is a most relevant part of all the projects. In pedagogical terms, the fact that the children have learned and acquired knowledge is important, but we think the final result is being underrated. Truth is that if, for the teacher, the final product is not the relevant issue, for the students, who are not aware of pedagogy and didactics, the final product is what this is all about. In that sense, to ignore the result of the projects, is to ignore the student's work and effort.

This is where digital tools, as virtual platforms and social communication networks play a vital role. Publicizing these projects and films and sharing them is the keyword, and it makes the student's efforts all worthwhile.

That is why all these films are available on the internet and can be seen and shared by everybody.

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# INFINITUM

Animação para a cúpula do Planetário do Rio de Janeiro – Brasil



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Leitão**

## Abstract

A animação Infinitum foi desenvolvida pelo Departamento de Artes e Design através de uma parceira do Núcleo de Arte Digital e Animação – N.A.D.A., o laboratório de Design de histórias – LA-DEH com a Fundação Planetário do Rio de Janeiro. A animação está em exibição desde janeiro de 2011 e já teve como público 40 mil crianças da rede pública, gratuita do Estado do Rio de Janeiro. O Presente artigo descreve seu processo de produção.

## Keywords

Animação, Cúpula, Jovens, Captura, Movimentos, 3D, 2D, Planetário

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## Sinopse

Quatro alunos pré-adolescentes, Pedro, Joana, Raul e Mayara, se reúnem no horário do recreio escolar para jogar um jogo de tabuleiro com temática espacial. Duas duplas de participantes disputam lançar uma sonda em um buraco negro, após terem completado todo o percurso. Em pouco tempo, a imaginação das crianças as transporta diretamente para dentro do jogo, e tanto elas quanto o público começam a viver uma emocionante aventura cheia de desafios até os confins da galáxia. Indicada para o público acima de 12 anos.

Em 2010, através de uma Parceria entre a PUC-Rio (Pontifícia Universidade Católica do Rio de Janeiro) e a Fundação Planetário do Rio de Janeiro, foi desenvolvido um projeto de animação para a cúpula do Planetário. Esse projeto foi coordenado pelos professores Cláudia Bolshaw e Gamba Junior em uma parceria do Núcleo de Arte Digital e Animação – N.A.D.A., com o Laboratório de Design de histórias – LaDeh, consolidando uma linha de pesquisa do departamento que é voltada para Mídias Narrativas. O projeto foi concebido em 2005 no âmbito da graduação e conduzido durante o ano de 2010 como um projeto integrado à pós-graduação, resultando no curta intitulado *Infinitum* que está em exibição desde janeiro de 2011 e já teve como público 22 mil crianças da rede de escolas públicas do estado do Rio de Janeiro e de outras localidades. Toda a parceria teve a mediação da Diretora de Departamento Luiza Novaes que também co-orientou o projeto PIBIC da Aluna Júlia Lacerda.

### 1.1 • Os Antecedentes do Infinitum

Em 2005, dois alunos de Design da PUC-Rio, Ed Schiffer e Gabriel Pires, apresentaram uma proposta de projeto com foco em animação em uma disciplina do currículo do curso de Design, sob orientação da professora Cláudia Bolshaw.

A disciplina tinha como proposta incentivar os alunos a buscar uma oportunidade de projeto em uma situação real. Os alunos fizeram um contato com o Planetário do Rio de Janeiro, e propuseram a pesquisa de oportunidades que resultou na lacuna identificada e que suscitou o desenvolvimento de um projeto de animação junto à instituição. Desta forma, trabalhariam em

parceria com eles na conceituação do projeto.

O filme foi concebido para ser projetado na Cúpula Carl Sagan, do Planetário do Rio de Janeiro, com 23 metros de diâmetro. Dentro da cúpula, a projeção acontece através de projetores diferentes, cada um com características distintas, alguns móveis outros fixos, com capacidade de projeção em áreas grandes e/ou pequenas.

Há também vários projetores de slides fotográficos. Além desses projetores tradicionais, o Planetário conta ainda com um projetor central, um equipamento circular que projeta até nove mil estrelas do mapa celeste – obedecendo, nesse caso, correspondências de localização desse tipo de cartografia.

Para o desenvolvimento do projeto foi necessário mapear todos os projetores disponíveis e suas áreas de projeção, para que a cúpula pudesse ser utilizada na sua potencialidade técnica e que a narrativa levasse em conta esse tipo de ambiente.

Com a conclusão da disciplina, o projeto contava com um mapeamento completo de todos os projetores e equipamentos disponíveis, um roteiro de 40 minutos incluindo informações didáticas fornecidas pelos próprios astrônomos e o concept art inicial dos elementos da narrativa (personagens, adereços, naves etc.). Mas, por conta de recursos da própria fundação, a animação não foi produzida nessa ocasião, até que em 2009, por ocasião das comemorações dos 40 anos do Planetário, surge uma nova possibilidade.

### 1.2 • A Retomada do Projeto Infinitum

Em 2009, o Departamento de Artes & Design da PUC-Rio foi procurado pelo Planetário do Rio de Janeiro, que desejava lançar uma animação no final do ano de 2010 para comemorar os 40 anos do Planetário.

Apesar de o Planetário ter nessa ocasião várias outras propostas de argumentos e roteiros, o criado na disciplina de graduação acabou sendo escolhido pela equipe do Planetário para ser desenvolvido. A dupla de alunos Ed e Gabriel, que já tinha se formado, foi então contatada e avisada de que seu projeto seria efetivamente produzido.

No início de 2010, a equipe do Núcleo de Arte Digital e Animação da PUC-Rio (N.A.D.A.), coordenada pela professora Cláudia

dia Bolshaw, se reuniu com os professores Nilton Gamba Junior e Marcos Magalhães para adequar o roteiro de 2005 às novas exigências da Instituição.

A animação foi definida como um filme de média metragem, pois teria no máximo 30 minutos incluindo o conteúdo didático do Planetário, onde as estrelas são projetadas em toda a cúpula e as constelações são destacadas para o público por um profissional do Planetário.

O Projeto começou com novas diretrizes, como redução de faixa etária do público alvo (11 a 14 anos), assim, foi preciso refazer seu briefing e re-planejar sua metodologia, ainda baseada no conceito de Design em Parceria.

## 2 · Metodologia

A metodologia do Design em Parceria é uma metodologia que se caracteriza pelo envolvimento ativo dos indivíduos para os quais se projeta, no caso, a equipe do Planetário que estiveram presentes em todas as etapas do processo, incluindo definições técnicas e artísticas.

A partir de então, houve o delineamento das etapas. A primeira etapa dizia respeito à pré-produção, quando seria refinado e concluído o roteiro, o concept art dos personagens, a seleção do material entregue pelo Planetário e seria feita uma pesquisa de referências - para cenários escolares e espaciais; uniformes escolares e de astronautas; texturas, expressões e acessórios para que tudo pudesse começar a ser produzido.

Foram selecionados para a dublagem dos personagens, e vários ensaios de composição de personagem e interpretação dos diálogos seriam feitos, até a obtenção de um resultado satisfatório para as personalidades dos protagonistas. Além dos protagonistas, havia um personagem secundário, um computador, necessitando de uma composição mais cômica e com uma atuação mais isolada, porém, de grande relevância para a veiculação do grande volume de conteúdo didático.

A etapa seguinte, a produção, começou pelo trabalho propriamente de desenvolvimento das animações, que foram divididas entre: 3D, 2D e slides explicadas detalhadamente no tópico Produção. Além disso, foi necessária a criação da sonoplastia e de uma trilha sonora original.

Na etapa de pós-produção, os arquivos foram salvos em DVDs e levados à cúpula para teste. Alguns estudos relacionados a variações cromáticas e resolução de imagem foram realizados, para contornar problemas de qualidade de imagem e tons de cor muito diferentes entre a projeção na cúpula e a visualização na tela do computador. As condições de áudio também demandaram diversos testes. Todas essas fases foram organizadas na primeira etapa de pré-produção.

### 2.1 · Pré Produção

Tecnologias Utilizadas. Para que toda a equipe tivesse acesso a todos os arquivos e pudesse trabalhar com eles e modificá-los, de forma compartilhada, foi adotado um dos computadores como o Servidor. O computador Servidor não era utilizado como estação de trabalho por ser o mais sobrecarregado com a transição dos arquivos para as máquinas secundárias.

Depois de definido o Servidor, foi estabelecido um sistema comum a todos para o salvamento dos arquivos – terminologia, numeração, sistema de pastas e backup.

Esse sistema era composto da seguinte forma: primeiramente o nome do arquivo, depois sua numeração, caso houvesse mais de um, separada pelo sinal underline. A cada mudança no arquivo, sua numeração devia ser mudada, criando um novo arquivo. Em seguida o nome da pessoa que estava trabalhando no arquivo, também utilizando o sinal underline para separação das informações e então a data, para que ficasse visível o último arquivo editado. Após a data, um ponto e em seguida a extensão, a informação indicativa da natureza do arquivo: imagem, vídeo e programa utilizado na sua criação - After Effects, Premiere, etc

Exemplo\_01: imagem\_001\_JU\_xx-xx-2010.jpg (imagem)

Com as especificações dos arquivos definidas, foi fácil trabalhar com os diversos segmentos que faziam parte do projeto.

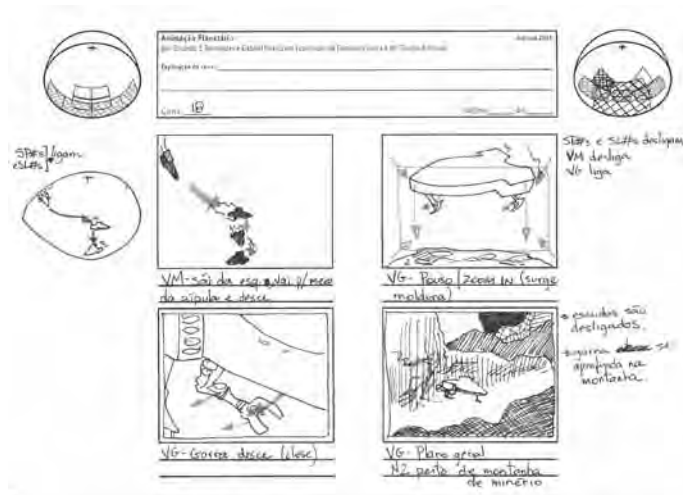
Roteiro e StoryBoard. A primeira iniciativa foi revisar o primeiro roteiro, que acarretava modificações em todos documentos anteriores de direção de arte. No roteiro a mudança mais significativa foi em relação ao tempo de duração, já que o roteiro original era de 40 minutos e o atual devia ter 30 minutos. Além disso, algumas falas foram reescritas para ficarem mais adequadas, resultando de uma pesquisa de linguagem voltada para o

público alvo adolescente e mantendo a precisão do conteúdo científico. O storyboard foi revisado e modificado seguindo as alterações feitas no roteiro e incorporando mudanças relacionadas aos equipamentos do Planetário, que foram trocados no decorrer desses cinco anos. Um dos projetores novos, por exemplo, possuía uma área de projeção menor, portanto as cenas que utilizavam esse projetor foram repensadas para utilizar essa nova área da melhor maneira possível.

A projeção utilizada no Planetário é bastante complexa. Existem cinco projetores, sendo um fixo para projetar no centro da cúpula, considerando centro o centro da parede curva para onde os espectadores olham, e não o centro da cúpula no topo. Foi esse projetor que foi substituído de 2005 para 2010 e a sua área de projeção mudou. Isso fez muita diferença, pois o storyboard de 2005 se baseava nessa projeção central para posicionar os outros projetores. Dos outros projetores, dois eram móveis, poderiam ser mudados de posição para melhor se encaixar ao projetor central, e outros dois eram de slides. As projeções de slides se caracterizam por imagens paradas, sem movimento e seriam utilizadas como projeções complementares.

Além do reposicionamento dos projetores, ângulos e posicionamento de câmera foram repensados e o storyboard foi redesenhado, levando em consideração as projeções múltiplas e simultâneas.

**F1.** Exemplo de  
Storyboard, 2005



**Personagens.** Os quatro personagens também passaram por mudanças. Ganharam características mais atuais, e suas personalidades, biótipos e nomes foram novamente trabalhados.

Os quatro personagens reformulados são:

**F2.**Concept Art, 2005



Joana – Menina descolada, fala muitas gírias, extrovertida, meio gordinha.

Raul – Menino esportista, com um cabelo enorme, divertido e tagarela.

Mayara – Menina tímida, nova na escola, fala pouco, magrinha e baixinha.

Pedro – Menino sabichão, “nerd”, um pouco tímido, gosta da Mayara.

Os personagens ao se sentarem para jogar se dividem em duas duplas, sendo que Joana faz dupla com Pedro, a dupla vermelha, e Raul faz dupla com Mayara, a dupla azul.

Para a criação do novo visual dos personagens, foram reunidas muitas referências pela equipe com um resultado muito abrangente e gerando uma mistura de técnicas e estilo que repercutiu no resultado final.

Essas referências basearam-se muito no estilo de desenho de cada membro da equipe, alguns com traços mais leves outros mais pesados, alguns desenhos coloridos outros em preto e branco. Mas também houve muitas referências externas do universo do público em questão, como personagens de desenhos animados, de jogos eletrônicos, de livros, revistas e histórias em quadrinhos.

Os personagens passaram por algumas mudanças significati-



vas, a menina Joana, era gordinha e gulosa, e se transformou em uma menina mais ativa, engraçada e extrovertida.

Raul que era mais esportista e sem muitos conhecimentos astronômicos, ficou mais sabido e ganhou um penteado Blackpower bem grande. Pedro não mudou muito, continuou “sabichão, mas ganhou um envolvimento afetivo com a Mayara, uma menina tímida, nova na escola, ganhou um pai astrônomo, e por isso tinha um conhecimento surpreendente sobre o assunto.

Além disso, os personagens ganharam um aliado, o Computador de Bordo, que está presente para esclarecer assuntos específicos sobre a Terra e sobre Buracos Negros. O conteúdo específico sobre o assunto foi enviado pelo Planetário, para ser editado posteriormente. O desafio nas etapas de direção de arte foi manter as características estruturais dos personagens e uma visão sistêmica do projeto, apear das diferentes técnicas.



F3. Personagens em 2D

F4. Personagens em 3D



O Jogo, O Tabuleiro e as Cartas. A aventura se passa no espaço e por isso foi pensado um meio de transporte para os personagens utilizarem enquanto jogam. O Planetário possui em seu museu um modelo de nave chamado Nave Escola. Essa nave pode ser visitada pelos alunos e visitantes e foi escolhida para ser o transporte dos personagens no jogo.

O roteiro, contudo, precisava estabelecer um contexto para que os quatro personagens chegassem ao espaço, para que fossem transportados para a imaginação. Por conta disso, nasceu a ideia de um jogo de tabuleiro, que se desenvolve a partir de cartas com orientações específicas. O tabuleiro apresenta todo o sistema solar, além de

asteróides, cometas e o buraco negro. Retirando uma carta “dica”, eles buscam por suas respectivas sondas espaciais, e rumam para o buraco negro, onde devem lançar a sonda finalizando o jogo. O caminho a ser percorrido é o mistério. Esse percurso depende das cartas retiradas e, por isso, a cada nova partida do jogo há mudanças.

O jogo foi planejado em todo seu funcionamento, para que o roteiro tivesse coerência. Regras foram criadas para o jogo. Cartas que podem ser de sorte ou azar foram elaboradas, com desafios e enigmas para serem decifrados. Cada dupla retira inicialmente uma carta “dica” em aberto, e em seguida cada personagem retira, alternadamente, uma carta para dar prosseguimento ao jogo. No filme as duplas passam por alguns planetas e pela Lua, juntando informações sobre acontecimentos astronômicos e curiosidades espaciais.

Figurinos. Cada personagem precisaria de dois uniformes. Um escolar e outro espacial.

Os uniformes espaciais foram pensados, desde o início, levando a questão cromática em consideração. Os uniformes escolares, por sua vez, levaram em consideração o sistema de uniformes comuns às escolas brasileiras, nos quais a camisa é padrão, mas a parte de baixo e o calçado podem ser escolhidos pelo aluno.



F5. Variações do Tabuleiro



Cenários. Os cenários definidos para a animação foram: o pátio da escola, o interior da nave e o solo da Lua. O interior da nave foi dividido em duas partes, a parte da frente era o local onde as duplas ficariam sentadas pilotando a nave e parte de trás ficaria

F6. Uniforme Escolar e Espacial

depois de uma porta onde seria a sala do computador de bordo. Para a construção do cenário da escola, foi feita uma pesquisa de imagens não só de locais, mas de alguns elementos, como os brinquedos do pátio: balanço, gangorra, escorrega, campinho de futebol, etc. Além de outros componentes como o portão da escola, textura da parede, árvores.

A criação do interior da nave possibilitou maior liberdade por parte da equipe, pois só havia definido sua parte externa, que seria um modelo fiel da Nave Escola, presente no Planetário. O interior da nave acabou sendo uma união de vários elementos pesquisados pela equipe; cadeiras, mesas, televisores, controladores da nave, botões, e painéis de informações foram pensados, desenhados e elaborados sem seguir inicialmente um padrão, mas ao final da modelagem, conseguiu-se manter uma unidade na definição de formas finais e materiais – mas, ainda mantendo a diversidade e a representatividade criativa das pesquisas e geração de alternativas de toda a equipe do N.A.D.A.



**F7.** Fachada da Escola  
e Interior da Nave  
Espacial

Material Educacional do Planetário. Dois vídeos foram enviados pelo Planetário. O primeiro contendo informações sobre o nosso planeta Terra, e o segundo contendo informações sobre Buracos Negros, que no filme simbolizam o fim da aventura.

Esses vídeos foram editados para serem exibidos no momento em que o personagem Computador de Bordo fosse consultado por alguns dos personagens.

Os vídeos além de editados receberam efeitos visuais no programa After Effects, para que se integrasse ao layout do resto do filme, buscando uma homogeneidade na linguagem visual.

## 2.2 · Produção

Essa etapa consistiu na produção e manipulação dos personagens, cenários, slidescartas e animações auxiliares. Primeiramente os personagens foram criados virtualmente em um programa chamado Blender (software livre).

A animação dos personagens e os cenários foram feitos utilizando-se o programa da empresa Softimage: XSI, foi utilizada uma versão de teste. Este programa é pouco conhecido no Brasil, mas é considerado mais preciso e possui mais ferramentas como a que possibilita a utilização do Lip Sync. Atualmente o programa chama-se Autodesk XSI, pois o programa foi comprado da empresa Avid pela empresa Autodesk, mesma empresa do programa 3D Max.

As animações adicionais, que não foram feitas com modelagem virtual, mas com animações em 2D, utilizaram os programas Photoshop, After Effects e Premiere, do pacote Adobe.

Tecnologias Utilizadas. Para a animação dos personagens foi oferecida à equipe de produção a possibilidade de utilização de uma tecnologia pioneira no cenário de produções de animação no Brasil. Essa técnica chama-se Motion Capture, ou seja, captura de movimento. Para utilizar essa técnica, uma parceria com o Instituto Nacional de Tecnologia (INT) foi acionada, para acesso aos equipamentos necessários. A captura é feita através de transmissores presos a uma roupa especial e captados por um programa de computador. A pessoa veste essa roupa e faz os movimentos necessários para serem capturados e depois esse arquivo é manipulado no programa utilizado para a animação, nesse caso o XSI.

Em nossa primeira experiência verificamos que os personagens criados não seguiam as proporções do corpo humano, os braços e pernas eram mais curtos e a cabeça muito grande, algo determinante na técnica de Motion Capture. Por esse motivo, algumas capturas tiveram que ser aplicadas aos personagens artesanalmente, tornando o processo bastante lento e trabalhoso. Outras não puderam ser utilizadas e a animação precisou ser feita no próprio programa XSI. Um dos aprendizados foi que para a utilização eficiente da técnica de Motion Capture, devemos desde o início trabalhar com proporções semelhantes entre os personagens idealizados e nossos modelos vivos que servirão de base para a captura do movimento.

Outra etapa técnica foi solucionar o Lip Sync, ou seja, a sincronização do movimento dos lábios de acordo com o que é dito. Para tanto, foi necessário utilizar uma extensão do programa XSI. Mas, a extensão disponível no programa era baseada na língua inglesa, portanto a representação de muitos fonemas em português não existiam, o que gerou a necessidade de modificá-los para que funcionassem na língua portuguesa.

O processo de Lip-Sync funciona dessa forma: primeiramente o rosto do personagem modelado é aberto no programa e nele são marcados pontos-chave.

Esses pontos servem de referência para o programa saber onde ficam os olhos, o nariz, a boca, a língua, o lábio superior e o inferior. Após essa etapa, é necessária a importação do áudio, ou seja, as falas interpretadas por atores e previamente gravadas em um estúdio. O programa analisa o que é dito e relaciona os fonemas com posições de lábios diferentes, dessa forma a boca do personagem se mexe de acordo com o que é dito.

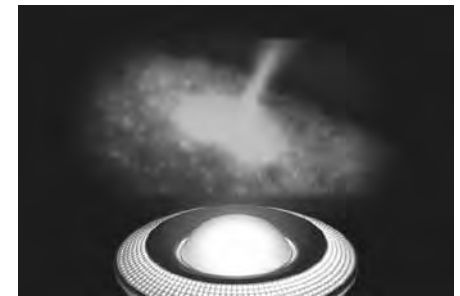
Outra tecnologia utilizada na realização do filme Infinitum foi a criação de slides - diapositivos físicos. O processo foi primeiramente configurá-los digitalmente, em seguida fotografá-los em filmes para serem revelados, montados e serem exibidos nos projetores de slides, anteriormente mencionados, complementando a projeção principal.

Desenvolvimento dos Slides. Como a proposta do Planetário era utilizar todos os recursos de projeção disponíveis na Instituição, pensou-se na utilização dos projetores de slides de forma complementar à projeção principal. Os slides mostrariam cenas paradas que não só ilustrassem algo que fizesse parte da narrativa, mas dessem ênfase ao acontecimento. Como o filme estava todo sendo modelado em 3D, optou-se na concepção dos slides por uma linguagem em 2D, exatamente para haver um destaque e diferenciação entre as duas técnicas, gerando um contraste interessante.

Desenvolvimento das Animações Vetoriais em 2D. Nessa técnica, desenhos vetoriais são feitos digitalmente em programas como o Illustrator, nos quais os desenhos são compostos por pontos e linhas. Uma vez criados os desenhos, utilizou-se o programa After Effects para animá-los. Essas animações não representavam os personagens nem os cenários, mas exemplificavam aconteci-

mentos astronômicos e curiosidades espaciais.

Aplicação de Vídeos Adicionais. Os vídeos adicionais selecionados e cedidos pelo Planetário tinham um conteúdo bruto com base em narrações sobre o planeta Terra e sobre buracos negros. Para incluir esses vídeos, o personagem Computador de Bordo foi criado. A função do personagem era, no decorrer da aventura, os quatro alunos poderem consultá-lo para buscar mais informações.



Os dois vídeos foram feitos com efeitos de holograma, pois os vídeos destoavam muito do resto do filme, pois haviam sido efetivamente filmados e não criados virtualmente. Por esse motivo, pois escolhido um efeito para ser aplicado por cima dos vídeos, assim ficariam mais integrados ao resto da animação. O efeito de holograma foi aplicado através do programa After Effects.

Criação do Áudio/Ruídos/Onomatopéias e Concepção da Trilha Sonora. O trabalho das vozes dos personagens foi realizado com atores profissionais com vasta experiência teatral e de audiovisual. Não foram escolhidos dubladores, propriamente ditos, por conta de uma experimentação de criação de personagens mais ligada à teatralidade – indo ao encontro da pesquisa do LaDeh de associação da teatralidade às mídias digitais. A direção de atores foi realizada pelo Prof. Gamba Junior, assim como uma supervisão das alterações do roteiro.

Nome dos atores - personagens:

Vânia Penteado – Joana

Gustavo Falcão – Raul

Daniel Dias da Silva – Pedro

Juliana Féres – Mayara

Fernando Caruso – Computador de Bordo

**F8.** Vídeo e Animação

Para as músicas e sons acidentais foi contratado o profissional Aurélio Dias. Seu trabalho só começou depois que algumas cenas já haviam sido feitas, servindo de animação de base. As cenas ainda seriam refinadas, a luz e o movimento dos personagens seriam melhorados, mas para a sonorização era necessário apenas que o tempo da cena estivesse correto e que não fosse alterado depois, para que os sons e músicas comesçassem e terminassem nos tempos certos.

### 2.3 · Pós Produção

Como o filme foi montado em partes, a animação principal em 3D, as animações em 2D e os vídeos/animações adicionais, além dos slides, a realização de testes freqüentes na cúpula do Planetário foi fundamental para que todas essas partes pudessem ser vistas como um todo, de forma integrada umas com as outras.

Como praticamente todo o processo foi realizado em mídia digital, a pós produção consistiu basicamente do fechamento dos arquivos e encaminhamento dos mesmos ao Planetário para que os astrônomos pudessem acompanhar essa etapa final do projeto e aprovassem o material. Muitos testes revelaram alguns problemas, como por exemplo, as tonalidades utilizadas em uma animação ficarem muito diferentes das usadas nos slides, no momento da projeção. A variação cromática entre os resultados visualizados na tela do computador e na projeção na cúpula precisou ser equalizada.

Além disso, durante o processo de produção foi definido que a animação depois de pronta deveria ser disponibilizada em HD, Alta Definição, para isso o áudio deveria ser desenvolvido utilizando a tecnologia 5.1, que conta com dois canais principais de áudio e mais três auxiliares que tornam a experiência sonora mais definida.

Os slides, depois de produzidos e finalizados foram entregues a um profissional do Planetário em formato .PNG, um formato compacto, não muito pesado mas que não comprime a imagem fazendo com que perca qualidade. Depois de prontos os slides, a equipe foi até a cúpula para testá-los. No teste alguns problemas com as cores foram detectados. Na projeção elas ficaram muito claras, sugerindo uma subexposição no momento da fotografia e da revelação. Isso foi corrigido posteriormente, embora não

afetasse o desenrolar da história.

Material de Divulgação. O convite de estréia do filme na data marcada para a comemoração dos 40 anos do Planetário, contudo, foi desenvolvido pela equipe do N.A.D.A.



F9. Convite de Estréia

### 3 · Conclusão

Quando concluído, o filme foi exibido para o público na comemoração dos 40 anos do Planetário do Rio de Janeiro. Na estréia, havia na platéia astrônomos, representantes de empresas de curtas e longas metragens, além de convidados da equipe que produziu o filme. A animação passou também a integrar a programação semanal da Instituição durante todo o ano de 2011 e que continuou no ano de 2012, devido ao seu sucesso de público, que até o presente momento, já contabilizou 22.000 estudantes com entrada gratuita.

Um questionário foi desenvolvido para ser respondido pelos alunos de forma que se pudesse avaliar não só o conteúdo transmitido, mas também elementos da animação. Os resultados iniciais apontam para o sucesso do projeto, e o cumprimento de seus objetivos.

A realização do projeto propiciou vários ganhos para os membros da equipe: a prática do Design em Parceria – entre os membros da equipe, com o Planetário, com o INT, com profissionais técnicos; a vivência da interdisciplinaridade; a exploração de novas tecnologias; o desenvolvimento de procedimentos para o compartilhamento de informações ao longo do processo e a aproximação com uma área de pesquisa promissora – o desenvolvimento de filmes para serem exibidos em cúpulas de Planetários.

#### 4 · Ficha Técnica do Filme

1. Coordenação e Produção - Cláudia Bolshaw
2. Supervisão - Marcos Magalhães e Gamba Jr.
3. Direção e Roteiro - Ed Schiffer e Gabriel Pires
4. Direção de Atores - Gamba Jr.
5. Equipe N.A.D.A - Ana Elisa Reis, Antonia Muniz, Francisco Gasparian,  
Gustavo Fukumoto, Julia Lacerda, Kawe de Sá, Suzane Santos
6. Interpretação de Voz, por ordem alfabética  
Daniel Dias – Pedro e Fernando Caruso – Computador de Bordo  
Gustavo Falcão – Raul e Juliana Féres – Mayara e Vânia Penteado  
– Joana
7. Direção de Arte - Ed Schiffer e Gabriel Pires  
N.A.D.A. – Núcleo de Arte Digital e Animação PUC-Rio
8. Desenho de Som e Música Original - Aurélio Dias

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## ANIMAÇÃO INTERATIVA

Desafios



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#### Abstract

A presente comunicação pretende abordar as possibilidades que se abrem atualmente, com a maturação e aparente ubiquidade da interatividade, a meios como o vídeo, o cinema e a animação, tradicionalmente construídos para uma fruição linear. Questionam-se significados e meios de integração desta interatividade em conteúdos animados; propõe-se ainda a criação de uma animação que faça uso da interação para crescer e transcender-se, sem perder o seu caráter específico.

#### Keywords

animação, interação,  
hipernarrativa, hipertexto.

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## 1 • Introdução

Com a crescente ubiquidade da digitalização de conteúdos, levantam-se questões no que respeita à interatividade e à sua presença em conteúdos digitais. O mapear do movimento que vai das linguagens essencialmente espaciais - a pintura, a instalação, o cenário virtual - às linguagens que dependem do tempo para produzirem significado - o cinema, o vídeo e a animação, poderá auxiliar o intuito de gizar uma forma de interação que faça sentido para o objeto animado a construir. Na presente comunicação questionam-se ainda as formas de leitura de animações interativas e que meios de maximização da experiência, que se pretende imersiva, estão ao dispor de quem os cria.

## 2 • Animação Interativa: contextualização

A comunicação que se segue procura abordar o resultado do entrecruzar de dois campos de ação:

1. Transformações atuais na linguagem da animação;
2. Formas de interação e modos de leitura de objetos interativos.

Este cruzamento de ideias poderá resultar numa questão que se formulará nos seguintes termos: qual será o resultado (em termos de criação e de fruição por outrem) da construção de um objeto animado que inclua a possibilidade de interação?

Outras questões derivarão obrigatoriamente desta: Como se adaptará a linguagem da animação (tradicionalmente linear) à linguagem da interação? Que meios ou estéticas de interação serão mais apropriados a um projeto desta natureza? Quais os resultados da (almejada) imersão gerada pela interatividade, isto é, como se experiencia um objeto assim criado?

Verifica-se que se apresentam desafios, alguns dos quais serão identificados mais adiante à animação interativa, enquanto forma que procura o seu meio e a sua justificação, num processo de maturação e de expansão dos horizontes.

Desde o seu nascimento, a animação incorporou no seu modo de processar uma curiosidade que a caracteriza, inicialmente, técnica, mas alargando-se à investigação formal e temática. Sendo uma forma ideal para contar histórias, devido à sua capacidade para mostrar o que não existe no mundo da imagem real, foi frequentemente relegada para o contexto de entretenimento para

crianças. No outro limite do espectro, a animação era uma das formas de expressão utilizadas pelos artistas dos movimentos modernos. Não existiu, durante muito tempo, investigação relevante na linguagem da animação entre estes dois polos de interesse [1].

Atualmente assistimos à disseminação das técnicas tradicionalmente associadas ao processo de animar a todos os campos de construção de imagem em movimento. Este fenómeno surge da digitalização de muitos dos passos necessários à construção de um filme, seja de animação, seja de imagem real. O criador de objetos da era digital apropria elementos já existentes, convertidos da sua linguagem nativa para bites e bytes, e cria novos objetos - compósitos. Manovich [2] aponta esta característica como uma das que definem a criação digital, identificando-a na criação não só de imagens paradas, como de música, texto, CDs multimédia e, inevitavelmente, filmes. A possibilidade de conjugar todo o tipo de elementos numa imagem abriu subitamente as portas a técnicas que anteriormente eram consideradas artesanais ou demasiado complexas para se aplicarem ao cinema comercial. Os efeitos especiais passaram a ser um pretexto plausível para ver um filme.

Esta manipulação de cada frame não pode deixar de sugerir os processos da animação, que está, cada vez mais, presente em meios até aqui inesperados. Começa a haver alguma dificuldade em definir o que é, afinal, a animação - até aqui era definida pelos processos, pela pesquisa técnica e formal, pelo carácter experimental. Torna-se necessário repensar e redefinir a forma como abordamos a animação. A criação de objetos animados deverá ser motivada já não pela experimentação técnica ou formal, mas pelo modo privilegiado como permite criar mundos diversos e abrir o leque de perspetivas, provocando a reflexão [1].

A integração de interação numa animação pode justificar-se pela vontade de explorar formas diversas de contar histórias e deve ser acompanhada por uma reflexão exaustiva quanto ao design e fins desta mesma integração.

O conceito de interação tem vindo a ser debatido de forma crescente, sendo questionados a sua origem e os seus objetivos. Interação é, originalmente, um termo que se aplica exclusivamente a dois, ou mais, seres humanos. O facto de, crescentemente, ser aplicado a uma relação homem - máquina (ainda que após ter sofrido uma mutação para interatividade) tem intrigado



F1. cartaz do filme Titanic - reedição em 3D, James Cameron. 2012.

pensadores, que se viram obrigados a dissecar os motivos que levam, cada vez mais, os seres humanos a serem não só sujeitos, mas também objetos nas suas relações com as máquinas cada vez mais complexas que os rodeiam. A interatividade é, paradoxalmente, o reflexo de um desejo de maior controlo, ao potenciar a escolha [3].

Curiosamente, embora vejamos campos outrora impensáveis, como a televisão, sujeitarem-se à demanda pela interatividade, o cinema (cinema de animação aqui incluído) tem vindo a resistir a esta pressão [4]. O visionamento no ecrã de cinema, distante e dirigido a dezenas de pessoas, não propicia interação que vá além da escolha do filme a apreciar e da hora a que o queremos ver. Explorando a hipótese da introdução de interação num filme animado, admite-se a hipótese da animação interativa que, embora próxima à linguagem dos videojogos, não seja um jogo, no sentido em que não castiga ou recompensa, mas sim uma nova forma de contar histórias. No decurso da construção deste objeto, questionar-se-iam caminhos de interação, reações dos públicos e trajetos percorridos, assim como possíveis formas de distribuição de tais objetos.

A procura de uma linguagem que permita a criação de um objeto animado cujo sentido está na possibilidade de interação obriga à necessária reflexão acerca da forma desta interação. Não fará sentido criar um objeto interativo no qual esta interatividade seja mero acrescento, sem motivação intrínseca ao próprio objetivo do projeto.

As linguagens da animação e do cinema, apesar de diversas, têm em comum os mesmos antepassados: os brinquedos óticos da época vitoriana. A fascinação com a máquina e os mecanismos que surgiu com a revolução industrial levou à criação de diversos aparelhos que, de uma forma ou de outra, exploravam modos de tornar aparentemente móveis imagens estáticas. Estes aparelhos eram, na sua maioria, construídos de forma a repetir uma sequência de imagens, originando assim um loop. Com a utilização que Edward Muybridge fez da fotografia, fotografando em rápida sequência movimentos de animais diversos, nasceu o primeiro loop de imagens reais; com a invenção de máquinas que permitiam registar imagens numa longa tira de película sensível nasceu a linguagem cinematográfica tal como a conhecemos hoje. O cin-

ema prosseguiu o seu caminho, proclamando a sua libertação das explorações técnicas iniciais, e deixou à animação uma liberdade expressiva cuja base provém do seu papel menor na indústria do entretenimento [2][4].

Em nenhuma das linguagens, no entanto, a busca pela interatividade surgiu naturalmente. O cinema prendeu-se à narrativa; a animação, nas suas formas mais convencionais, seguiu também esta opção. Ao perder a repetição cíclica, o loop original, os dois formatos cingiram-se ao tempo, à manipulação do tempo, à edição da dimensão temporal, relegando a edição e colagem espacial para a categoria de efeitos especiais [2]. A narrativa linear não se presta à introdução de variáveis, sob pena de se perder o sentido da narrativa - o desenvolvimento de interação sofreu com este contexto.

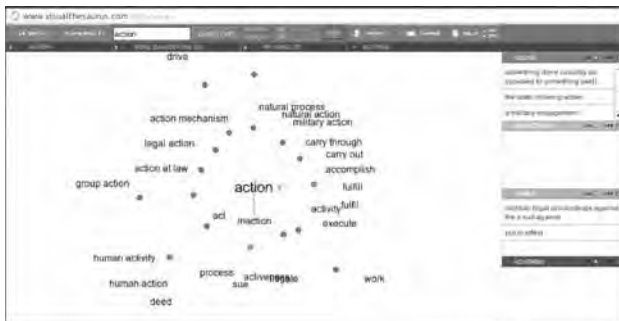
Recentemente, com a conversão generalizada para o ambiente digital que se aplicou a todos os tipos de frutos da atividade humana, os efeitos especiais tornaram-se apelativos, pela facilidade com que se podem aplicar e pelas possibilidades novas que apresentam. Abriu-se assim a linguagem cinematográfica à exploração espacial [2] e às técnicas que, entretanto, a animação foi tornando suas [4]. Tornou-se muito difícil destrinçar o cinema de imagens reais do cinema animado - e, visto que, afinal, a animação já está em todo o lado, deixou de ser o parente pobre do cinema live action. Subitamente é possível encontrar animação em contextos muito diversos e com funções, também elas, muito diversas. A digitalização do mundo permitiu também uma explosão no aparecimento de conteúdos interativos, por oposição às sessões de cinema nas quais ao público resta apenas a opção de ver, ou recusar-se a ver, aquilo que lhe é apresentado no ecrã da sala de cinema.

O cruzamento destas duas tendências levou ao aparecimento de pequenos filmes interativos, que se baseiam na construção de ramos alternativos na narrativa - hipernarrativas - que podem ser escolhidos sem prejuízo do sentido do objeto fílmico. A forma da interação é bastante limitada a um pequeno número de opções convencionadas pela prática e moldadas pelas possibilidades técnicas do nascimento da era informática. A metáfora do escritório converteu a ideia de operar um sistema informático a uma dimensão muito limitada, que implica um esquecer do corpo,

a utilização de periféricos específicos como o teclado e o rato, e a uma exclusão de outras formas de interação [5]. O questionamento deste comportamento, altamente estruturado e balizado, coube às práticas artísticas performativas, que, após um primeiro momento de aprendizagem das opções existentes, começou a explorar outras formas de interação, livres dos condicionamentos do formato (até certo ponto) universal. Com o correr do tempo e a maturação do meio informático, foi possível ver algumas destas formas alternativas crescerem e serem utilizadas pela indústria (o caso dos gestos da mão que manipulam tablets e telemóveis, ou mesmo da utilização de todo o corpo para controlar plataformas como a wii ou a kinect). A forma da interação não tem assim que ser, necessariamente, confinada ao clique no botão para fazer avançar a narrativa [5]. Posto isto, surge uma opção para uma animação interativa da natureza que aqui se propõe - procurar uma forma de interação que se relacione de um modo mais orgânico com a natureza da linguagem da animação, tentando criar situações de recolha de input que não sejam uma disrupção na narrativa, e que tornem a experiência imersiva.

Por outro lado, o design desta interação também poderá ser objeto de um questionamento - a forma como as opções se apresentam e como a aplicação responde à introdução de dados oriundos do utilizador. Janet Murray [6] oferece uma série de possibilidades, originadas pela reflexão sobre o design de aplicações destinadas a interação. Segundo Murray, o movimento do espacial para o temporal, feito pelo cinema quando escapou aos constrangimentos dos mecanismos proto-cinemáticos, pode ser invertido para obtenção de situações de interação mais interessantes e menos intrusivas do ponto de vista da imersão do fruidor

**F2.** Thinkmap Visual Thesaurus - palavra action. Imagem obtida em <http://www.visualthesaurus.com/app/view> em Maio de 2012



na narrativa que se pretende fazer experimental. Um dos exemplos dados é o da criação de um mapa de relações, no caso a opção escolhida pelos criadores de um thesaurus online:

O modo como esta migração do temporal para o espacial se pode operacionalizar poderá permitir uma integração da linguagem da animação com a interação mais orgânica e simples. Poderá fazer sentido explorar a linguagem do ciclo, do loop. Ao mesmo tempo, a organização espacial, ao invés de temporal, desta narrativa, seria uma forma de refletir o modo como vivemos - navegando num espaço, criando uma narrativa que se gera quando alteramos este espaço. Sendo assim, estas duas hipóteses de exploração, a do espaço e do ciclo que se repete, fazem todo o sentido quando procuramos uma forma de interação para um projeto desta natureza.

Para Fritsch [7], a forma como interagimos com tecnologias cada vez mais presentes modela a nossa relação afetiva com o mundo e com os objetos interativos: as formas de interação não precisam de ser, necessariamente, transparentes, mas sim bem desenhadas e bem construídas, podendo chegar a ser fontes de identificação e modos de construir e afirmar identidades pessoais. Aliando esta ideia ao conceito de flow, frequentemente aplicado à construção de videogames, que prevê uma imersão ideal do jogador quando a dificuldade das tarefas é adaptada para cada interator [8], facilmente se conclui que o design da interação deverá ainda, se possível, prever e ter em conta situações particulares.

### 3 · Desafios

Na tentativa de identificar, necessariamente de forma não exaustiva, alguns dos desafios que a animação interativa enfrenta atualmente, serão apresentados exemplos representativos de três das tendências mais comuns para o desenvolvimento de interatividade em conteúdos animados.

## 1º desafio – Para além da linearidade

O primeiro desses exemplos é uma animação disponibilizada no sítio de partilha de vídeos, Youtube. Trata-se de uma adaptação de uma série de episódios animados, criados por Osvaldo Cavandoli, entre 1971 e 1986. A adaptação consiste apenas no acrescento de interatividade, pelo que se presta de forma excelente ao tema



**F3.** La Linea. Série de televisão criada por Osvaldo Cavandoli. 1971 – 1986



**F4.** La Linea Interactiva. Patrick Boivin. 2008. Disponível em <http://www.youtube.com/watch?v=RZzlezxLu7s> em Outubro de 2012

deste artigo, visto que podemos comparar a versão interativa com a original e perceber até que ponto a introdução de interatividade cria novos sentidos.

A obra original, a série de episódios La Linea, consiste em 90 episódios com cerca de 3 minutos cada um. Cada episódio conta as peripécias que acontecem a um ser definido pelo contorno (branco sobre um fundo azul). Diz-nos a página dedicada a este trabalho no sítio IMDB [9] que os episódios eram, frequentemente, utilizados entre outros programas televisivos, de forma a ocupar o intervalo de tempo. Verificamos assim que se trata de uma obra atomizada e com significados contidos num curto espaço de tempo. A ordem pela qual os episódios eram mostrados não é relevante para o desenrolar do conteúdo.

A obra interativa utiliza uma linguagem plástica e técnica semelhante, mas permite a ação do espectador sobre o que está a ver. Como tantas outras, recorre ao esquema em árvore para delinear a estratégia de interação. Visionamos um curto momento animado que conduz a um menu, perante o qual somos confrontados com a necessidade de escolher um de três botões (ou caminhos). O personagem contorce-se e irrita-se perante a nossa hesitação. Acabamos por escolher uma das opções só para ver o que acontece, sem qualquer ajuda na nossa escolha. As consequências da escolha também não são determinantes para o sentido da animação: se encarmos a obra original como uma série, no seu conjunto, concluímos que a possibilidade de alterar a ordem com que os episódios eram vistos já estava presente. Não há, portanto, sentidos novos nesta reencarnação de La Linea: a introdução de interatividade é supérflua e pouco imaginativa na sua forma.

Já foi referida a abordagem de Janet Murray [6] no sentido de desenhar e criar interação significativa recorrendo ao espaço e ao ciclo. Uma outra possibilidade é a de seguir o que Murray chama o modelo do jogo, na tentativa de encontrar soluções diferentes para as formas de interação. Sobretudo, importa perceber que a simples introdução de interação não vai melhorar uma obra só por si – no caso de La Linea, seria necessária uma reflexão mais profunda acerca do que se pretendia alcançar ao tornar a obra interativa e depois procurar repensar a forma como essa interação deveria ser implementada.

Conclui-se que o primeiro desafio que se apresenta aos cria-

dores de animações interativas é o de criar formas de interação que tenham justificação no conjunto de significados da obra – a introdução de interatividade, irrefletidamente e só por si, não é geradora de novos sentidos.

## 2º desafio – Para além do jogo

O segundo desafio que se apresenta aos criadores de animações interativas é o de ultrapassarem a designação e formatação do videojogo. Sendo um meio expressivo que, cada vez mais, devido à sua massificação e presença crescente na indústria de entretenimento da sociedade ocidental, é a primeira e primária fonte de inspiração para a criação de interação em narrativas, o videojogo é um modelo óbvio quando se procura criar interatividade significativa. Podemos, no entanto, argumentar que se, na tentativa de melhorar as formas de interação e criar sentidos novos, o resultado final não se distingue de um videojogo, então nada de novo foi criado.

O exemplo que em seguida se apresenta identifica-se como um videojogo – trata-se de *Machinarium*, criado pelo estúdio Amanita Design, em 2009.



*Machinarium* foi cuidadosamente animado e, embora tenha efetivamente uma estrutura de videojogo (é necessário resolver puzzles para avançar na narrativa, existe uma estrutura em níveis, etc), a componente narrativa e a animação são claramente o que o distingue dos demais – basta-nos verificar que ganhou um prémio para excelência no campo da arte visual, conferido pelos Independent Game Awards de 2009 [10]. Sendo assim, o que nos impede de dizer, quando confrontados com *Machinarium*, que es-

**F5.** *Machinarium*. Amanita Design. 2009. Versão de demonstração disponível em <http://machinarium.net/demo/> em Outubro de 2012

tamos perante uma animação interativa? Basta iniciar a aplicação, e perceber que nos é pedido que completemos uma tarefa (e não qualquer tarefa, ou uma dentro de um leque de possíveis tarefas – é preciso acertar e é possível falhar) para avançar na narrativa e progredir para o palco (ou nível) seguinte, para percebermos que, neste videojogo, como em todos os outros, predomina a lógica do jogo sobre a lógica narrativa.

Embora um jogo possa (e efetivamente o faça) transmitir sentidos e provocar reflexão [11], e portanto, não deva ser uma forma de transmitir conteúdos a descartar, tem o seu próprio meio e os seus intuitos, que podem não coincidir com os que se pretendem para uma animação interativa. Quando falamos em animação tocamos muitos pontos que se encontram também na definição de jogo – uma forma de criar novos mundos e novas possibilidades, impossíveis ao filme live action [1]. No jogo, porém, a narrativa (ou a transmissão de conteúdos) está subordinada a um conjunto de regras [12] e esquemas de gameplay, que não são interessantes no caso da animação – embora toda a interação tenha regras, poderá não ser necessária, ou significativa, a criação de um sistema de recompensas e obstáculos.

Significa, portanto, que não basta seguir um esquema de interação conhecido e difundido – o dos videojogos – na criação de algo a que possamos chamar animação interativa. Não se está aqui a demonizar uma forma de comunicação que, como vimos, é perfeitamente válida e que, demasiadas vezes, sofreu com a etiqueta de entretenimento ocioso e mesmo perigoso [11]. Uma etiqueta semelhante é, muitas vezes, atribuída à animação, como foi referido na contextualização acima apresentada, e verificou-se sempre inútil, errada e, em última instância, perniciosa para quem cria animação, assim como para o campo mais vasto da cultura visual e artística. Um jogo, e um videojogo, tem completa capacidade para criar e transmitir sentidos e formas de questionamento novos e diversos. Simplesmente, para a investigação presente, torna-se claro que é necessário criar novas formas, novas estéticas de interação; não é suficiente ou inovador fazer um belo jogo e chamar-lhe animação – nem o campo dos videojogos, nem o da animação, ganham qualquer benefício com tal amalgame.

### 3º desafio – Em busca de complexidade formal e narrativa

O último desafio que aqui queremos apresentar, embora não, seguramente, o último que se apresenta aos criadores de animações interativas, é o de não cair no extremo oposto aos que vimos anteriormente. Se em *La Linea Interativa* as formas de interação são pouco desenvolvidas e pouco interessantes e em *Machinarium* são criadas para um formato diferente, no terceiro exemplo que aqui trazemos as formas de interação são o tema exclusivo da obra. Trata-se de *Manual Input Sessions*, de Golan Levin e Zachary Lieberman, criada em 2004.

*Manual Input Sessions* não se identifica como uma animação e, no entanto, recorre a animações no seu funcionamento e na sua estratégia de criação e geração de imagens. É aqui apresentada porque explora formas de interação inovadoras e há algo a aprender com este tipo de experiências. Por um lado, para além da pura exploração formal da interação há um mundo rico em conteúdos que não é explorado por *Manual Input Sessions*; por outro, a simples introdução de botões num filme animado pode não conduzir aos efeitos desejados, pelo que devem ser tidas em conta as explorações artísticas das formas de interação como descritas por Simon Penny [5]. A utilização do corpo para além da mão e do olhar pode ser uma das formas de ultrapassar as convenções atuais no design de interação; resta fazer a experiência, tentando não fazer pender a relação interação-narrativa para extremos como aquele que *Manual Input Sessions* habita, mas sendo mais inovador nas estéticas de interação do que o criador de *La Linea Interativa*.

### 4 • Conclusões

O presente artigo não origina conclusões definitivas, por si, sendo um ponto de partida mais do que uma investigação fechada; para evitar desnecessárias repetições, visto que as conclusões foram sendo apresentadas ao longo do texto, resta-nos afirmar novamente o desejo que estes e outros desafios sejam cuidadosamente encarados e originem a reflexão devida na criação de elementos pertencentes a um campo tão rico em explorações e experimentações como o cinema de animação.



**F6.** *Manual Input Sessions*. Golan Levin e Zachary Lieberman. 2004. Vídeo da performance disponível em <https://vimeo.com/2375069> em Outubro de 2012

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## “HISTÓRIAS MAL CONTADAS”

Animação para narrativas interativas, um conceito em evolução



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## Abstract

Os livros digitais interativos para crianças estão ainda numa fase inicial de evolução, particularmente no que toca à exploração das suas narrativas e no seu potencial de conter diferentes desenlaces das histórias e contos. O avanço da tecnologia provocou o aparecimento de livros em suportes digitais, em alternativa aos formatos tradicionais analógicos, permitindo que às narrativas lineares se sobreponha um aproveitamento do potencial interativo e não linear, através do qual o leitor/utilizador pode participar na história, e a imagem estática pode ser substituída por imagem animada, por vezes também ela interativa. O corrente artigo pretende descrever uma metodologia de construção, teste e implementação de conteúdos de representação visual animados e interativos que serão inseridos numa aplicação desenvolvida para um plataforma tablet (ipad), com o nome de “Histórias Mal Contadas. A estrutura desenvolvida permite ao utilizador a criação de alternativas e escolhas ao longo da animação e proporciona a possibilidade da criança construir as suas próprias histórias através da sua criatividade e experimentação, permitindo em alguns momentos um input pessoal, que torna a experiência de leitura mais personalizada e única. É feita uma análise e reflexão sobre como uma narrativa com imagem animada suportada por tecnologias multi-toque pode proporcionar novas alternativas de leitura e interação, e desta forma aumentar e desenvolver o imaginário da criança.

## Keywords

animação, interação, hipernarrativa, hipertexto.

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## 1 · Introdução

“Interactive Narrative is the most ambitious art form existing today, because it combines traditional narrative with visual art and interactivity” (Meadows S., 2003)

Segundo Sylvie Lapointe [2007], uma história é uma experiência interativa e dinâmica entre o narrador e o ouvinte porque ambos se adequam um ao outro. É uma ferramenta de comunicação poderosa que reúne imagens e palavras, transmitindo informações. Com o avanço das tecnologias podem ser lidas e contadas histórias através de diferentes meios e dispositivos. Pode ser lida uma história num livro num formato tradicional (papel), bem como pode ler lida a mesma história num dispositivo digital (computador, tablet). Podemos dividir em quatro grupos a interação de um leitor com uma narrativa contida num livro: pode ser uma narrativa linear num livro analógico; uma narrativa linear num livro digital; uma narrativa não linear num livro analógico; e uma narrativa não linear num livro digital. Este último é o contexto que nos interessou explorar neste estudo.

A interatividade potencia a criação de experiências personalizadas e possibilita uma participação mais ativa da criança numa determinada narrativa. As narrativas interativas oferecem novos caminhos ao utilizador, proporcionando novas formas de contar uma história.

*“... interactive stories solicit audience participation in the story and this help them to more intensely internalize the material.” [Vorderer 2003, p.177]*

Com o surgimento dos formatos digitais em alternativa aos formatos analógicos tradicionais, foi evoluindo também o potencial dos suportes, e das novas possibilidades de interação que estes vão permitindo – geo-referenciação, sensores de luz, cor, movimento, arrastar, agitar, uso do sopro, zoom, rodar, inclinar, toque, áudio – o que fez com que a narrativa tradicional passasse a tender para uma narrativa interativa, onde o leitor/utilizador participa ainda mais na história através da interatividade e da animação, não se resumindo a opções convencionais de direções num estrutura ramificada de opções narrativas. Um livro impresso pode também permitir a interações por parte das crianças que o leem essencial-

mente de dois modos: através de manipulação física de partes do mesmo (como no caso dos livros pop-up); e através da navegação não linear nas páginas de um livro, saltando entre partes deste. Estas interações são no entanto limitadas as características físicas e de produção de um livro impresso. Existem livros interativos analógicos (impressos em papel) como O Principezinho – o Grande Livro Pop-Up, de Antoine de Saint-Exupéry [2009], e Um Livro, de Hervé Tullet [2011], que proporcionam a participação ativa do utilizador e o estímulo da sua imaginação e interação com o próprio objeto-livro. O primeiro, através das múltiplas sensações que proporciona, tais como o cheiro, a textura de cada folha e a sua tridimensionalidade, que transmite ao folheá-lo, e o segundo devido ao facto de conter um jogo que ensina as cores, a contar, onde a criança pode soprar, sacudir, carregar, inclinar, bater palmas. Por outro lado, um livro digital pode oferecer novos caminhos a uma determinada narrativa e permite uma maior interação entre o utilizador/suporte digital. No campo dos livros digitais interativos o The Fantastic Flying Books Of Mr. Morris Lessmore, de William Joyce [2011], é um livro que tem como objetivo ensinar o inglês através de uma narrativa interativa, onde o utilizador tem a oportunidade de pintar, escrever, desenhar e ouvir. É um dos casos onde o livro tradicional é reinventado para um contexto digital.

Com as possibilidades tecnológicas nos suportes para livros digitais as imagens impressas e estáticas dos livros analógicos passaram a poder ser imagens animadas no contexto digital. Dentro dos dispositivos digitais, um destaque para os dispositivos de carácter multi-toque, por assumirem características de interação física natural, e que não exigem grande aprendizagem para serem utilizadas e portanto a interatividade permitida criar experiências mais intensas para o utilizador.

## 2 · “Histórias Mal Contadas”: uma aplicação com uma nova abordagem interactiva

Esta investigação está associada ao desenvolvimento de um projeto prático com o nome de “Histórias Mal Contadas”. Este projeto tem o objetivo de proporcionar à criança a possibilidade de construir as suas próprias histórias, a partir de contos tradicionais portugueses. A tradição de contar oralmente uma

história caracteriza-se pelas sucessivas possibilidades de a contar de um modo distinto, dependendo da memória e do desenvolvimento do imaginário de cada indivíduo. Segundo Piaget (1974), o desenvolvimento da criança, é caracterizado por um processo de sucessivos equilíbrios, passando por quatro diferentes estágios, refletindo em cada um determinadas formas de pensar e de agir nas diferentes idades. O público-alvo para esta aplicação centra-se nas crianças entre os 6 e os 7 anos, enquadrando-se no estágio pré-operatório. É nesta idade que a criança vive um período intuitivo usando a inteligência e o pensamento. O seu imaginário está repleto de ficções, apesar de já distinguirem a fantasia do real.

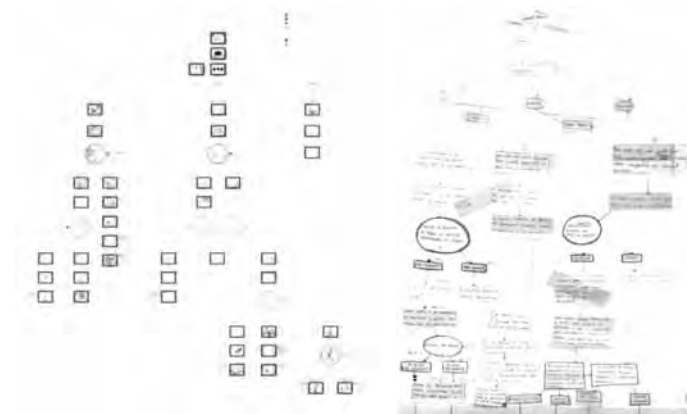
A aplicação “Histórias Mal Contadas” consiste num livro digital de ilustração infantil que engloba uma animação interativa baseada em três contos tradicionais portugueses (Lenda da Serra da Estrela, Lenda de Mirandela e Lenda do Castelo de Bragança). Para este projeto optou-se pela escolha de três contos tradicionais portugueses porque segundo uma expressão tradicional portuguesa, “quem conta um conto, acrescenta um ponto”, ou seja, quando alguém reconta uma determinada história, colmatando lapsos na história com pormenores da sua autoria, provenientes das suas experiências e emoções, transforma a narrativa original, numa nova, personalizada, mais ou menos adulterada.

A aplicação em desenvolvimento permitirá ao utilizador a criação de alternativas e escolhas ao longo da animação, tanto ao nível de opções entre ramificações de várias narrativas que se cruzam, bem como através das condições que o seu input individual impõe no desenrolar da narrativa. Este projeto empírico funciona como um incentivo à aprendizagem das crianças tendo como objetivo o desenvolvimento da sua literacia visual e o perpetuar de elementos das histórias tradicionais portuguesas centrado numa experiência única e original.

## 2.1 · Metodologia de Construção da Narrativa

A primeira fase do processo de construção da aplicação consistiu na conjugação das três lendas portuguesas numa estrutura narrativa ramificada. Para tal, foi criada uma estrutura que conjugasse as três histórias, com o intuito de relacioná-las através de lugares e personagens compatíveis de modo a que fossem intermutáveis na navegação entre excertos narrativos.

Optou-se por utilizar uma estrutura acíclica, possibilitando o aumento dos percursos das histórias e tornando-a mais interativa, e por sua vez não linear. A estrutura das narrativas foi pensada para que o utilizador (criança) através da experimentação construa a sua própria combinação de excertos narrativos, ou seja a sua própria histórias, dentro das três narrativas intermutáveis definidas.



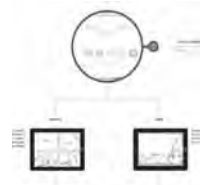
**F1.** Estudo da estrutura das narrativas.

**F2..** Storyboard: permite perceber os conceitos visuais e as interfaces, organizando os pontos-chave de interação que modificam os rumos das narrativas

Foi desenvolvido um estudo diagramático (fig.1) contendo o enredo das histórias, sendo constituído pela diferenciação de cores, permitindo a organização e a fluidez das histórias, bem como a sua separação. Ambas as histórias partem de um nó inicial, ou seja na página inicial do livro, e depois separam-se a partir da escolha de uma determinada personagem e a partir daí estão diretamente dependentes das opções e input do utilizador. Após a conclusão da estrutura da narrativa, foi necessário a criação de um storyboard (fig.2 e fig.3) para que cada excerto narrativo fosse associado a uma determinada configuração de interfaces e a elementos que o contém, bem como as suas configurações visuais para serem posteriormente animadas.

## 2.2 · Testes preliminares com uma amostra

Segundo Quivy R. (Et al 1992), a observação é uma etapa intermédia entre a construção dos conceitos e das hipóteses, por um



**F3.** Pormenor do storyboard: exemplo de um ponto-chave da narrativa onde o utilizador, dependendo da sua ação, muda o rumo da narrativa

lado, e o exame dos dados utilizados para as testar, por outro. Neste encadeamento, a segunda fase deste processo consistiu na constituição de um grupo de amostra para a participação em testes preliminares com crianças do ATL da Santa Casa da Misericórdia de Barcelos, com idades compreendidas entre os 6 e os 7 anos. A amostra abrangia 5 rapazes e 5 raparigas da cidade de Barcelos, que frequentavam o 1º e o 2º ano do ensino básico. Os testes preliminares com um grupo amostra de crianças pretendem demonstrar como é que estas abordam as diferentes histórias e plataformas, para posteriormente no decorrer do projeto se consiga adequar as ilustrações e as interações às diferentes necessidades dos utilizadores.

A primeira fase consistiu numa exploração por parte das crianças por algumas lendas tradicionais portuguesas, no caso utilizaram-se as lendas escolhidas para o projeto “Histórias Mal Contadas”. Começou-se por dar conhecer as histórias com uma sessão de leitura e posteriormente as crianças exprimiram-se plasticamente inspirados no que ouviram. Esta ação teve como o objetivo entender os diferentes contextos imaginários deste escalão etário, o modo como as crianças representaram os vários elementos das histórias e a sua capacidade de síntese, ou seja que tipo de elementos das histórias as crianças entenderam ser suficientes para representar de um modo sintético a narrativa.

**F4.** Sessão de leitura com as crianças do ATL da Santa Casa da Misericórdia de Barcelos - desenho feito por uma criança sobre a Lenda de Mirandela



A segunda fase do estudo com a amostra consistiu na personalização de personagens em aplicações interativas para computador. Para tal, utilizou-se um jogo interativo The Simpsonsaker e o website <http://caxxxero-illustration.blogspot.pt>, sendo que ambas as aplicações permitem que as crianças manipulassem personagens

de um modo individual e personalizado.

O jogo interativo baseava-se na construção de personagens da série animada Simpsons (Matt Groening, 1987), utilizando simplesmente um clique do rato para optar por várias características da personagem, como penteados, olhos, nariz, formato da cabeça, utensílios e cenários, através de um menu com setas na interface (fig. 4). A segunda aplicação, o website, permitia ao utilizador a construção de personagens através do arrastar de diferentes objetos, tais como bocas, olhos, chapéus, barbas, cabelo, de uma forma mais espontânea, onde a criança, apesar de ter limitações de objetos, podia combinar um conjunto mais variado de elementos nas figuras (fig. 4)

**F5.** Interfaces das aplicações utilizadas para a realização da segunda actividade no ATL



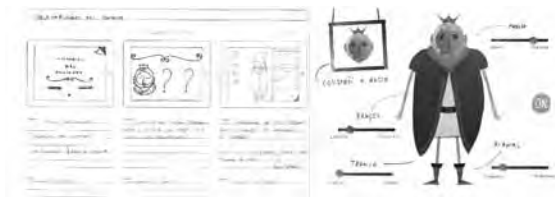
Foi possível observar diretamente que a maioria das crianças se interessou mais pela caracterização livre das personagens no website do que no jogo, e mediante questionário aos intervenientes a principal razão indicada passava pelo facto das expressões mais variadas que as personagens podiam incluir, e pelo brincar com a junção de diferentes objetos.

Ambos os testes foram relevantes para se perceber de que forma se poderia construir os conteúdos visuais para a aplicação a desenvolver mais de acordo com os contextos imaginários das crianças que foram aferidos, bem como pensar na melhor forma de incorporar interações que proporcionassem uma experiência aliciante e uma leitura interativa e lúdica para os utilizadores.

## 2.3 · Construção de conteúdos visuais

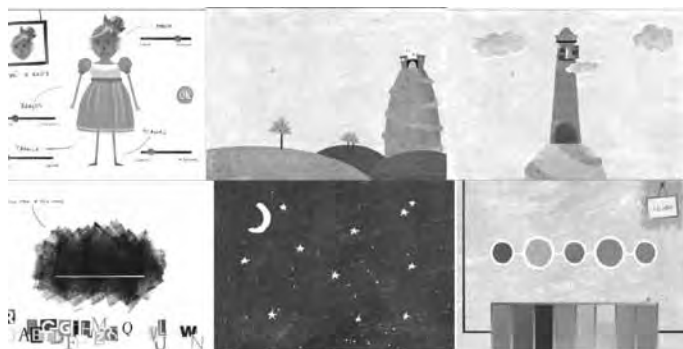
Uma vez estabilizada a estrutura narrativa, a criação dos storyboards e da realização dos testes exploratórios com a amostra, iniciou-se a realização dos conteúdos visuais para a aplicação “Histórias Mal Contadas”. Optou-se pela utilização de uma

técnica mista (recortes de revistas, colagens, pastel de óleo) para a realização de todos os conteúdos gráficos interativos. A partir de uma base de colagem e recorte de elementos impressos procedeu-se à digitalização dos elementos e posteriormente utilizou-se o Adobe Photoshop para o desenvolvimento das ilustrações que vão ser utilizadas na aplicação.



**F6.** Comparação dos estudos do storyboard com a utilização da técnica mista nas ilustrações para aplicação

Todas as ilustrações construídas seguem o mesmo conceito de plasticidade de modo a manter a coerência durante toda a interação. A plasticidade permite a criação de desenhos mais expressivos, por exemplo, no início da aplicação a criança é convidada a criar uma personagem e tem a seu dispor um leque de conteúdos interativos feitos a partir de recortes de publicações impressas (olhos, bocas, orelhas, cabelo). As ilustrações para a aplicação foram pensadas sempre com o intuito de estimular o utilizador a diversas sensações, tais como sensações visuais, auditivas, e táteis, tais como o pintar, o abanar, o soprar, o som dos objetos, o carregar e o arrastar.



**F7.** Exemplos de algumas ilustrações desenvolvidas para a interface da aplicação.

## 2.4 · Fases do estudo a desenvolver no futuro

Uma vez estruturado o projecto e desenvolvidos foi desenvolvida uma parceria com uma empresa na área da informática e ciências da informação. A fase corrente do desenvolvimento do projeto consiste na programação de toda a aplicação por parte da entidade colaboradora em simultâneo com a construção dos conteúdos visuais remanescentes e de afinações dos conteúdos já desenvolvidos. Para finalizar será efectivado um teste de um protótipo piloto com uma amostra similar à usada nas actividades exploratórias iniciais, numa escola de ensino básico nacional. O protótipo piloto da aplicação tem o intuito de encontrar alguns aspetos que possam ser melhorados no projeto a nível interativo e intuitivo, bem como testar a usabilidade da aplicação e a receptividade da amostra em relação aos conteúdos.

## 3 · Conclusão

E se o facto de a criança desenhar um pássaro com asas pequenas, e ele não conseguir voar, mudasse o rumo dessa mesma história? Este projeto engloba uma forma diferente de contar uma história, onde o utilizador faz parte dela e a desenvolve através das suas ações. As narrativas interativas digitais, oferecem novos caminhos ao utilizador, proporcionando novas formas de contar uma história e fazer parte dela. As inovações tecnológicas, os novos suportes digitais, os novos modos de interação disponíveis, permitem às crianças escolhas cada vez mais amplas. A criança pode ouvir, ler, olhar, soprar, agitar e inclinar, interagindo assim com uma determinada história, que num modo linear seria apenas contada.

Com o desenvolvimento da aplicação para ipad "Histórias Mal Contadas" pretende-se introduzir uma nova forma de contar uma história, onde a criança através da sua imaginação, comanda o rumo da narrativa, cria as suas próprias personagens e pode por algum input individual único, com consequências no desenrolar da história.

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## A ANIMAÇÃO COMO SUPORTE PARA INTERACÇÃO COM O ESPAÇO FÍSICO



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### Abstract

A animação é uma área disciplinar com raízes tradicionalmente sustentadas nos media audiovisuais, mas que tem evoluído para vários contextos e suportes em novos media digitais. Uma das áreas na qual essa evolução é visível, é o contexto da realidade aumentada. Este documento descreve o desenvolvimento de um protótipo de animação tridimensional através da realidade aumentada. O modelo usa o sistema de realidade aumentada para determinado local, adicionando informação específica sobre o mesmo. Serão apresentadas algumas características da realidade aumentada bem como as suas vantagens tecnológicas, e possíveis restrições do hardware e software da aplicação desenvolvida.

### Keywords

Animação tridimensional, animação de personagens, realidade aumentada, interacção, comunicação.

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## 1 · Introdução

O objectivo da realidade aumentada passa por combinar uma representação do mundo real com uma representação de um mundo virtual gerado por computador de maneira a que aparentem ser um só [1]. A realidade aumentada pode oferecer muitas oportunidades para o desenvolvimento de novos formatos de animações, que possam tirar partido das potencialidades da combinação entre imagem real e imagem digital, no sentido de oferecer diferentes experiências aos utilizadores. É neste contexto, caracterizado por fortes alterações que incide a questão de como pode a animação contribuir para uma maior interação entre um utilizador e o espaço onde está inserido?

Encontramos crescentes exemplos de aplicações com animação através da realidade aumentada em publicidade, videojogos ou aplicações optimizadas a contextos específicos que exploram novas possibilidades de visualização e interação no relacionamento com determinado espaço físico. A realidade aumentada permite que o nosso quotidiano esteja repleto de informações virtuais apenas visíveis através de aplicações que sobrepõem essas imagens à paisagem urbana, as aplicações como Layar, que utilizam o GPS para determinar a posição do utilizador, ao mesmo tempo procura informações ligadas ao local onde se encontra [2]. A empresa Dassault Systèmes cria produtos em 3D utilizando a realidade virtual e aumentada, como é exemplo um dos seus projectos, Giza 3D, que proporciona novas formas de interação com os objectos virtuais. Destinado tanto para técnicos de arqueologia como para o público em geral, é uma experiência imersiva de simulação e visualização de dados arqueológicos recriados tridimensionalmente [3]. Na área artística surgiu recentemente em Serralves a primeira instalação em realidade aumentada, da autoria de João Paulo Feliciano. O projecto, denominado “Walls to the People”, é composto por inscrições que foram recontextualizadas nas paredes da Casa de Serralves. São imagens virtuais que apenas são visíveis através de um dispositivo com a aplicação de realidade aumentada desenvolvida pela Up Digital, aliando assim a tecnologia à arte [4].

Este documento explora a visualização de informação através de animação de personagens tridimensionais que se sobrepõem ao mundo real através da realidade aumentada, vista por um

dispositivo móvel. Estão massificados em termos de produção e são comuns de encontrar suportes digitais (hardware) que permitem a aplicações de realidade aumentada, como são exemplo os smartphones e tablets. Este factor contribui para um aumento do interesse no desenvolvimento de aplicações em realidade aumentada, tanto para dispositivos móveis como outras plataformas digitais [5], sendo que o potencial criativo desta tecnologia ainda só começou a ser explorado [6].

Cada local contém informação que define o contexto em que se insere, e é através dessa informação recolhida que pretendemos que a animação se possa tornar bem sucedida na interação entre um espaço de carácter cultural e aqueles que o visitam. A realidade aumentada é usada neste projeto para ampliar e transformar a qualidade e quantidade de informação contextual relevante, disponível num determinado lugar.

A animação através de realidade aumentada é ainda um conceito pouco explorado no âmbito criativo [7], tendo os estudos que encontramos sobre o assunto um pendor de carácter mais tecnológico do que conceptual ou criativo. Procuraremos com este artigo dar um contributo para uma melhor percepção do que é animar neste contexto específico.

## 1.2 · Realidade Aumentada

Realidade aumentada é um termo usado numa grande gama de tecnologias relacionadas que procuram integrar informação virtual com o mundo real. Esta tecnologia pode ser algo desde informação textual sobreposta em cenas reais como cenas gráficas interativas e tridimensionais.

A realidade aumentada depende da capacidade de captação de informação do hardware acerca do mundo real, como o vídeo, dados de posicionamento e orientação, e ter a capacidade de reproduzir a fusão entre media em directo com os conteúdos virtuais [6].

Para realizar a operação, o dispositivo móvel combina dados de GPS (Global Positioning System) para saber a posição do utilizador, informação de bússola para saber a orientação, um acelerómetro para determinar a localização do dispositivo e um giroscópio para o movimento. Para o reconhecimento do local são utilizados marcadores, que podem ser ou não objectos, usados

como ponto de referência, e a calibração da imagem gráfica. Assim a perspectiva, ou visualização no ecrã, é actualizada e muda conforme a posição e o movimento do dispositivo no mundo real [5].

## 2 · Projecto

O entretenimento faz parte da sociedade moderna, e nota-se o rápido desenvolvimento de aplicações para acompanhar a nossa era digital [8].

Este projeto pretende explorar o potencial de uma aplicação com conteúdos informativos animados para uma instituição nacional relevante a nível cultural - a Casa da Música. Através de interações focadas em temáticas ligadas ao edifício, como a exploração das especificidades das salas, informação contextual pertinente e interações musicais de carácter lúdico.

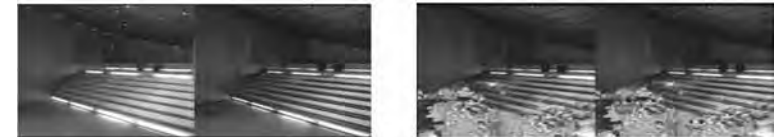
Pretende-se que a presença de elementos animados e interação possa complementar a informação existente no espaço, contribuindo para a sua melhor compreensão. Um guia (indivíduo) pode ser muito útil a um visitante, na medida em que descreve o local onde se encontram, partilha informação sobre a sua construção e outras informações de interesse. No entanto, existem limitações. Um guia providencia informação essencialmente verbal e essa apresentação oral não substitui demonstrações visuais daquilo que não está explícito no local [5]. Essas demonstrações podem realçar a percepção do utilizador do ambiente real através da exibição de informação que o utilizador não se consegue aperceber diretamente quando se encontra sozinho [10].

O primeiro passo foi efectuar um levantamento dos espaços, imagens vídeo e características específicas, secundado por consulta aos profissionais e guias do local para complementar informação menos visível. (Fig. 1, 2, 5 e 6).



De seguida foram feitos alguns estudos exploratórios através de foto-montagem, de como a entender como se poderiam

**F. 1, 2, 3, 4.**  
Visualização da sala Laranja, presente na Casa da Música, com uma explicação ilustrativa do aspecto possível através do uso de uma aplicação em realidade aumentada.



acrescentar elementos adicionais virtuais ao espaço, que permitissem criar um ambiente tridimensional no qual o utilizador se sinta imerso (figs. 3, 4, 7 e 8). É através do desenvolvimento de ferramentas através das quais se possa facilitar a interação que se pode fazer a ponte entre as ações do mundo real e as ações sobre os objetos virtuais. Este tipo de abordagem reforça a credibilidade do mundo virtual, e permite ao utilizador uma interação mais intuitiva [9].

Como objectivo principal, com a animação através de realidade aumentada procuramos melhorar a qualidade e quantidade de informação contextual relevante do espaço, diretamente no local. Ou seja ao mesmo tempo procura-se proporcionar uma visualização dos conteúdos informativos e áudio através de uma experiência mais apelativa - fisicamente não invasiva - com vista a melhorar a compreensão da informação do local bem como transformar a vivência do espaço cultural numa experiência mais dinâmica e imersiva, associada à sua temática principal - a música. Deste modo o utilizador pode ter um papel mais activo na exploração do espaço visitado, podendo usufruir de uma perspectiva aumentada que a aplicação interativa que propomos faculte, tornando a vivência do espaço numa experiência única. O projeto pretende que qualquer utilizador que visite o espaço definido, tendo um dispositivo digital adequado, possa usufruir da experiência planeada. Os conteúdos visuais e narrativos previstos para este projeto, são de um nível de compreensão e interação simples de modo a que se adapte a todas as faixas etárias e escalões sociais.

## 3 · Metodologia

Na produção de animação para realidade aumentada existe uma combinação de perspectivas estéticas, técnicas, sociais e culturais. Assim sendo, podemos analisar as aplicações em quatro diferentes camadas que incluem o hardware, o código de programação, a interação, e os conteúdos visuais animados.

**F. 5, 6, 7, 8.**  
O Visualização da sala Roxa, também presente na Casa da Música, com uma explicação ilustrativa do aspecto possível através do uso de uma aplicação em realidade aumentada.

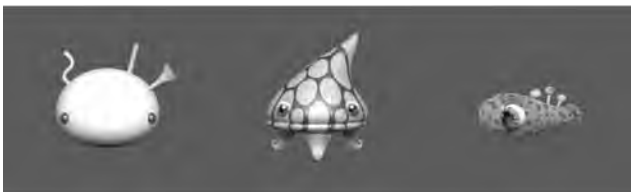
A criação de ambientes virtuais interativos tem origem na área de computação gráfica [1] e sendo assim foi necessário encontrar um especialista em programação que fizesse a transposição do material animado para a plataforma digital que permita o reconhecimento do espaço que irá despoletar as animações desenvolvidas.

A abordagem metodológica começa como referido anteriormente, por um levantamento das características dos espaços potencialmente a explorar. De entre as várias salas que compõem a casa da música foi selecionada a sala VIP, pela boa iluminação natural e artificial que detém e devido a questões técnicas relacionadas com o reconhecimento de marcadores no espaço que permitem despoletar as animações.

De seguida foi um levantamento de elementos associados à música, nomeadamente vários tipos de instrumentos musicais, desde instrumentos de corda, aos de percussão, e muitos outros que ajudaram no conhecimento desta área. A fase seguinte passou pela definição dos conteúdos visuais que consistem na criação de personagens (Fig. 9). Foram definidas 5 personagens a construir, de entre as quais optamos por começar a modelar as personagens Clau, Bau e Ori, cujos nomes foram selecionados por serem curtos e fáceis de memorizar por um utilizador que faça uma visita breve ao edifício. As personagens foram inspiradas em instrumentos musicais, começando pelo Clau que foi baseado na gaita de foles, de seguida o Bau que foi inspirado nos pratos dos elementos de percussão, e ainda a Ori que é uma personagem que remete para os instrumentos de sopro. Foram realizados esboços iniciais e depois foram modeladas digitalmente em 3D. À personagem Clau foi adicionado um esqueleto para que se possa mover de forma a parecer uma pequena bola de borracha elástica que se desloca quase deslizando.

As animações estão associadas a uma série de interações que foram definidas na construção de uma narrativa inicial e de um

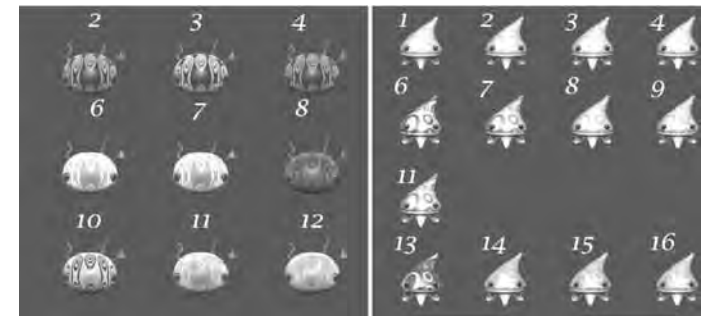
**Fig. 9.** Três das personagens ainda em desenvolvimento, que foram criadas com o intuito de as inserir no ambiente virtual da Casa da Música.



storyboard. Este mostra a sequência da aplicação durante a sua experimentação, tendo como pontos principais a apresentação das personagens, com estas também é apresentado o espaço com informações fornecidas por cada personagem e por último um pequeno jogo em que o objectivo principal é interagir com as personagens de forma a que estas reproduzam sons.

Quanto aos conteúdos visuais, após modelados num contexto digital 3D, são definidos através das suas características principais, cor, textura e ainda os seus traços psicológicos que irão dar origem às suas personalidades e tipos de interação com o utilizador (Figs. 10 e 11).

**F.10, 11** Variações de cor de duas das personagens desenvolvidas, com o objectivo de encontrar a que melhor se adapta à personalidade de cada uma.



O referido storyboard multimédia define os conteúdos da animação e as acções possíveis das personagens, bem como a informação a veicular acerca do espaço físico. De seguida foram construídas animações referentes a uma fase de pré-produção dos conteúdos audiovisuais, pequenas acções dos personagens descontruídas em fragmentos animados que mais tarde, somadas, irão formar as sequências narrativas permitidas aplicação. Quanto à vertente tecnológica do projecto, serão definidas as interacções com as personagens para poderem despoletar as animações construídas em cada toque. Com um conjunto de testes de software e hardware, é avaliado o cumprimento dos requisitos técnicos e funcionais.

#### 4 · Processo e Protótipo

O desenvolvimento de aplicações em realidade aumentada necessita de optimização da interação entre o utilizador e o modelo, de

forma a permitir que este obtenha o desempenho máximo na sua utilização.

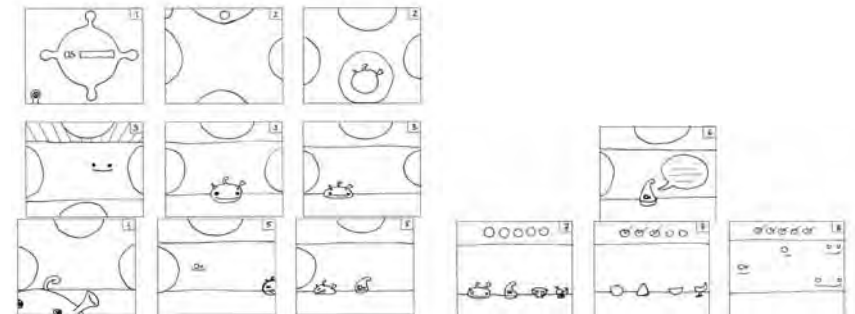
Para uma boa optimização do modelo é necessário uma boa estrutura hierárquica dos seus componentes que potencie renderização. Para isso, essa organização hierárquica deve ter em conta o funcionamento dos componentes de renderização a que se destinam. Nesta parte abordam-se as técnicas utilizadas para aumentar o desempenho e assegurar a componente “tempo real” do modelo.

#### 4.1 · Conteúdos Visuais

Os conteúdos visuais das animações tridimensionais têm temáticas que variam de sala para sala, tendo como componentes pequenas personagens, com características similares a cada espaço. As narrativas animadas convidam os utilizadores a interagir com os elementos da própria sala. Os conteúdos animados seriam vistos no interior do edifício, com uma pequena narrativa em cada espaço visitado. O utilizador será levado a percorrer as salas existentes procurando os locais onde poderão surgir animações despoletadas pelo toque, que por sua vez se tornam elementos musicais com os quais se poderá interagir. Essas animações focam os elementos particulares que cada espaço tem para oferecer. Os conteúdos visuais são uma combinação entre informação e animação, tendo como elementos de comunicação algumas personagens presentes em cada sala (Fig. 6) que são simultaneamente instrumentos animados que guiam a visita e proporcionam uma interacção mais lúdica.

Como referido anteriormente, foi realizada uma construção de narrativas e um storyboard para definir os conteúdos finais da animação e os tipos de interacção com as personagens (Fig. 5). Primeiramente é apresentada a aplicação e a sua interface que mostra pequenas silhuetas de personagens escondidas com o intuito de o utilizador as procurar no local onde o se encontra quando inicia a aplicação. Por cada personagem que se encontre, é fornecida alguma informação relevante sobre a sala onde se encontram e ao mesmo tempo é apresentada a personagem encontrada, que fica a vaguear pela sala enquanto o utilizador termina a procura do resto dos elementos. Enquanto as personagens esperam pelo utilizador ficam aborrecidas e começam a tentar interagir, quando

este retribui a interacção faz com que as personagens passem de um estado aborrecido e triste para um estado mais contente e alegre. Finalizando a busca pelas personagens da sala, e com elas a informação sobre a mesma, a aplicação sugere um pequeno jogo com os elementos encontrados. Este jogo descreve uma sequência musical com sons iguais aos das personagens, e é pedido ao utilizador que, através da interacção com as personagens, reproduza correctamente essa sequência de sons. Terminando a tarefa, o utilizador pode deslocar-se ao próximo local onde terá acesso a mais personagens escondidas.



Como referido optou-se para o desenvolvimento do protótipo, por focar na sala VIP da casa da música e consequentemente em trabalhar as interações e animações a ela associadas. Uma vez finalizada a modelação de personagens e definido um storyboard para servir de guião para as interfaces e interações passou-se para uma simulação de teste no espaço real (fig. 6) com vídeo capturado no próprio local. Isto permitiu concluir questões associadas à escala no ecrã e no dispositivo, espaço de navegação do objecto e possíveis relações com as especificidades do espaço seleccionado.



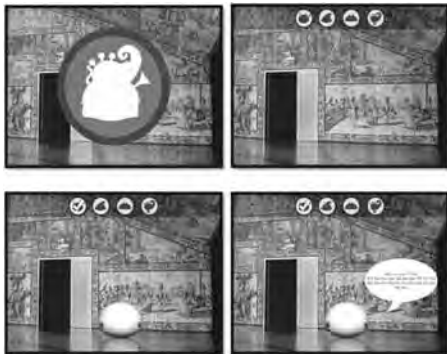
**F5.** Storyboard, com pequenas ilustrações sequenciais da narrativa da aplicação, que mostra os pontos importantes do seu desenvolvimento, a interface e a distribuição de elementos no espaço.

**F6.** Pré-visualização de uma das personagens desenvolvidas, inserida no contexto da sala Vip da Casa da Música.

## 4.2 · Simulação Gráfica

Tudo isto é utilizado em conjunto de forma a juntar dois tipos de mundo, o virtual, onde se encontram as pequenas criaturas, e o real, que consiste na captura da câmara e os valores registados pelos sensores. Esta leitura de sensores, e simulação de um mundo virtual, são importantes para que seja possível posicionar e saber onde se encontram as personagens para que o utilizador as possa ver, interagir, e ter noção do espaço em seu redor. Isto é, ao registar o movimento e orientação do dispositivo móvel, é possível determinar a sua posição no mundo virtual em relação aos outros objectos tridimensionais. Calculadas as posições, orientações do utilizador, e personagens, estas são projectadas no ecrã sobre as imagens capturadas pela câmara, dando a ilusão de que estão presentes no mundo real (Fig. 7).

**F7.** Produção preliminar da interface da aplicação em desenvolvimento.



## 4.3 · Dispositivo Móvel

O dispositivo seleccionado para servir como suporte para a mediação tem um grande efeito nas imagens e código que desenvolvido. Um dispositivo móvel não é apenas um computador mais pequeno, é um domínio completamente diferente para a interação do utilizador.

Quando uma aplicação é desenvolvida para um dispositivo móvel, é preciso ter em conta o tamanho diminuído da área de visualização, o tempo de carregamento e suporte ao toque de ecrã. Com ecrãs que variam de tamanho, tendo em consideração tamanhos relativamente pequenos, será necessário que a navegação

seja rápida e simples para poder facultar determinada informação. A variedade de tamanhos de ecrãs varia tanto que torna complicado este tipo de decisões.

## 4.4 · Marcadores

A partir do ponto de vista visualizado, ou aumentado, a aplicação pode ser inserida em qualquer sítio do ambiente real com a ajuda manual do utilizador. Este usa o dispositivo e um ponto de referência, neste caso um marcador, para introduzir a aplicação e observar a cena aumentada exibida no monitor do dispositivo [8]. Os marcadores são essencialmente padrões que se podem imprimir que ajuda o sistema de realidade aumentada a reconhecer pontos de referência. A necessidade de marcadores existentes no local real da simulação tem algumas limitações [6].

## 5 · Possíveis Limitações

Uma característica importante para a realidade aumentada interactiva é a possibilidade de animar os objectos virtuais presentes no cenário.

Idealmente a aplicação não restringe o movimento pelo espaço. O sistema deverá permitir movimentação sem limitações mecânicas, pontos-mortos nem restrições de movimentos. Um dos principais desafios da realidade aumentada é determinar a melhor renderização dos objectos virtuais que serão fundidos com a realidade [1].

A não-utilização de marcadores possibilita a criação de ambientes através do reconhecimento de caras ou outros objectos, sem a necessidade de um padrão imprimido. O problema reside na dificuldade tecnológica de um sistema de reconhecimento sem marcadores, e para isso é necessário também o apoio e conhecimento de elementos externos ao projecto.

A quantidade de informação incluída no modelo causa elevados tempos de carregamento e refrescamento de imagem que podem afectar a interactividade. Foi necessário tratar os elementos de origem com uma simplificação da representação geométrica de forma a torna-los o mais compacto e estruturado possível.

A dificuldade que um utilizador possui em interagir com um mundo tridimensional pode dificultar a idealização e implementação de interfaces eficazes [9].

## 6 - Conclusão

Todos os locais contêm informação que define o contexto no qual que se inserem. Tornar acessíveis esses conteúdos, através de outras formas mais envolventes de visualização e interacção, pode proporcionar uma experiência mais rica e mais significativa desses espaços. Este projecto expõe uma tentativa de demonstrar que a realidade aumentada pode fornecer interacções lúdicas com os objectos virtuais que aumentam, valorizando, a visão do utilizador do cenário real. Verificamos um aumento de frequência na utilização de animação em contexto de realidade aumentada, e uma maior exploração das potencialidades da mesma, por cada vez mais entidades. Estas procuram uma nova perspectiva de experimentar realidades reconhecíveis, através de uma nova perspectiva, tanto de percepção como de interacção.

Levando em consideração o exposto, o corrente contributo procurou analisar o panorama da utilização da animação no contexto da realidade aumentada, focando as suas diversas formas e suportes, de modo a enquadrar as premissas necessárias para a implementação de um projecto nesta área, experimentável em dispositivos móveis e permitindo o acesso a um grupo alargado de utilizadores individuais. Tendo em vista os aspectos analisados, procuramos criar uma estrutura que faculte aos visitantes uma experiência lúdica, informativa e esperamos na sua forma final, imersiva. Ao longo do desenvolvimento do projecto fomos apercebendo da existência de limitações técnicas que condicionam uma fruição optimal da tecnologia, como as condições luminosas, a capacidade dos dispositivos de reconhecer características no espaço e ainda a especificidades do próprio espaço estudado. No entanto as referidas limitações não condicionam o projecto de um modo incontornável, sendo encontradas alternativas para a sua viabilização em breve, mas um estado mais avançado do estudo permitirá contribuir para análise aprofundada dos resultados, e cujas conclusões esperamos possam ser um contributo para uma melhor utilização de animação neste contexto noutros projectos futuros.

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# «SOUP ISN'T LIKE THAT, SOUP'S YELLOW»

Children's Responses to Illustrations as a Result of their Visual References



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## Abstract

Each of us, throughout our life, accumulates a diversity of visual referents that are gathered and organized in a sort of archive. As part of a broader study, this paper presents and discusses the results of the verbal and physical responses of 5-, 8- and 11-year-old children to the illustrations in children's books that were awarded the Prémio Nacional de Ilustração in the period between 2000 and 2009, with particular emphasis to those responses molded by their visual referents. It is to understand from this study that the meanings we give to everything we see, read, hear and feel are a reflection of previous multi-sensory experiences and are largely determined by the context in which we find ourselves.

## Keywords

illustration, children's literature, reader response, Prémio Nacional de Ilustração, visual referents

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## 1 · Referential Archive

The visual referents a reader uses will always influence the qualitative dimension of their interpretation. Indeed, each of us throughout our lifetime accumulates a diversity of visual referents that are gathered and organized in a sort of archive where «todas estas imágenes forman parte de nuestra vida cotidiana. Algunas nos impactan de manera especial y las recordamos durante años» (Obiols Suari, 2004, p. 22). Some texts (using the term in its broader sense, to include the visual and the verbal) have the unexpected possibility of triggering a surprise-effect because of their innovation. In much the same way we grasp certain images «em momentos diversos e por razões variadas: ou porque nos agradou a sua beleza, ou justamente pela razão inversa, porque de tão chocante feriu a nossa sensibilidade e deixou igualmente a sua marca» (Sotto Mayor, 2010, p. 635) .

Our individual image archive, a kind of personal art gallery, is unique and individual. Andricaín (2005, p. 39) explains this idea well when he argues that the image inventory each one of us keeps «constituiría el resultado de experiencias y oportunidades diferentes, sería la suma de nuestra existencia, estaría marcado por el contexto sociocultural en que nos desenvolvimos, por la incidencia de los medios de difusión masiva (la televisión, los periódicos, las revistas, la publicidad), por las horas que estuvimos frente a las pantallas de los cines y la naturaleza de los fotogramas que vimos proyectados en ellas, por los museos y galerías que recorrimos y, naturalmente, por los libros que leímos o simplemente hojeamos, por las imágenes gráficas que nos salieron al encuentro desde sus páginas». Factors such as gender, race or social status play a role in the formation of our previous experiences and will therefore influence the way we deal with and make sense of what we experience.

This way all the referents we take in, once compared, processed and refined, result in a personal aesthetics, what we commonly call taste. Having this or that taste will depend on the quantity and, especially, the quality of our visual archive, a sort of encyclopaedia of memories resulting from our aesthetic experiences. The main characteristic of this archive is its constant mutation; the images create a dialogue between themselves, morphing into different conceptions and aesthetic judgements. If

communication is seen as an open system then each time a reader returns to a text – seen in its broader sense to include multiple codes – their interpretation will be distinct, due to the transaction that occurs between what they know and understand at that given moment. Obiols Suari (2004, p. 54) states the illustrations can not be considered as «un estímulo que cae en una habitación vacía. En la habitación ha habido experiencias previas. Y, desde luego, cada habitación es distinta».

The formation of the individual starts in the first years of life and is «depende[nte] destes primeiros anos, da experiência e da memorização dos dados, o indivíduo vir a ser livre ou condicionado» (Munari, 2007, p. 37). Our grasping and later comprehension of something new is always contaminated by our referents, which are responsible for the value-judgements we constantly make. Literature contains images of such force that they are perpetuated in the reader's mind long after a certain piece has been read. Colomer (2005, p. 93) comments that it is precisely «la fuerza de esas imágenes lo que explica que éstas se reutilicen en las obras literarias, una y otra vez, hasta quedar incorporadas al imaginario colectivo», becoming an integral part of that image archive we all possess, stocked according to our individual paths through life.

Contemporary children have an image archive (filled to a greater or lesser extent), which is largely made up of stereotypes, simple or simplified images. The growth and evolution of this archive, and thus a child's development, can be impaired if observation and personal reflection is related with cliché and the commonplace: «los libros ilustrados de calidad, en los que hay cabida para diferentes modos de ver y representar la realidad, son la mejor alternativa contra el peligro de los estereotipos» (Andricaín, 2005, p. 44).

Since «in this increasingly image-dominated world, young people need to be able to deconstruct the images that confront and manipulate them» (Smith, 2009, p. 95), access to quality children's literature, though not the only way, can prevent the massification of thought and afford the potential of other reflections.



## 2 · Presentation of the Corpus to a Group of Children

This article is part of a PhD project in Child Studies focusing on Visual Communication and the Visual Arts, with the objective of contributing to the characterization of contemporary Portuguese illustration in children's literature, especially in the period between the years 2000 and 2009. The corpus was selected from the only official national competition that annually analyses, critiques and distinguishes books with illustrations by Portuguese illustrators: the Prémio Nacional de Ilustração (PNI). Analysis of the corpus was preceded by a study in which it was thought relevant to give voice to the children (Ferreira & Sarmento, 2008) in order to be able to perceive and analyse their responses and critical points of view towards the selection of books with illustrations. As «children have the right to say what they think should happen, when adults are making decisions that affect them» (UNICEF, 1990), the study began with the presentation of the corpus to two groups, children attending state schools (nº 17) and children attending private schools (nº 18). Schools were selected as convenience samples in or around the urban area of the city of Porto.

The 35 children who participated in the study were of three age levels (5, 8 or 11 years old); covering the three cycles of Portuguese education - preschool, first cycle and second cycle; and grouped into sets of 6, except for one group which had only 5 due to the absence of a child through illness. Apart from the 5-child group, each group had an equal number of children of each sex. There were two sessions where five award-winning books were shown to each group, half of the corpus at a time, resulting in a total of 12 sessions.

The semi-structured interviews were registered in video format (audio and image), making possible an association between verbal and non-verbal responses (Flewitt, 2006; Mourão, 2012; Styles & Noble, 2009) as well as combining the perceptions of both the children and the researcher. The children's interventions were not limited: they were allowed to speak freely and give their opinion about an illustration whenever they so pleased. Only the results from the transcribed interviews related to that which was considered their referential archive have been used as the basis for this article.

The picturebooks that were commented on by the children as

a reflection of their referents, and which will be discussed next, were: *Estranhões & Bizarrocos*<sup>1</sup> [Weird and Bizarre Creatures], text by José Eduardo Agualusa and illustrations by Henrique Cayatte, published by Dom Quixote, winner of the PNI in 2000; *O sonho de Mariana*<sup>2</sup> [Mariana's dream], text by António Mota and illustrations by Danuta Wojciechowska, published by Caminho, winner of the PNI in 2003; *Come a sopa, Marta!*<sup>3</sup> [Eat your soup, Marta!] text and illustrations by Marta Torráo, published by O Bichinho de Conto, winner of the PNI in 2004; *O quê que quem - notas de rodapé e de corrimão*<sup>4</sup> [Who's who & what's what - footnotes & grace notes] text by Eugénio Roda and illustrations by Gémeo Luís, published by Eterogêmeas, winner of the PNI in 2005; and *A charada da bicharada*<sup>5</sup> [The Animal Charade] text by Alice Vieira and illustrations by Madalena Matoso, published by Texto Editores, winner of the PNI in 2008.

## 3 · Children's Responses to Illustrations

Arizpe (2009), in a study about immigrant children's responses to picturebooks and through which they contact a new culture and identity, mentions that «their responses to the array of images before them will be based on their experiences of the visual and on their cognitive skills». And continues, «in turn, these experiences and skills will depend on their home culture (and how image is regarded in this context), personal experiences and previous encounters with text and pictures» (2009, p. 134). As will be seen, responses from the children in this study analogously reflect these same things.

Mariana, (an 8-year-old attending a private school), enjoyed *O Quê Que Quem - notas de rodapé e de corrimão* [Who's who & what's what - footnotes & grace notes]<sup>6</sup>, a dictionary-like book that plays with words and their multiple meanings, «because this» - pointing at the cover - «whatever it is», alluding to an unspecified object in the illustrations «(...) later becomes a shoe». This affirmation is reason for a subtle smile to flitter across Mariana's lips. Her interpretation of an unspecified detail on the cover was influenced by her life experience around shoes, due to her father's job, which is understood when she added: «And then my dad has a shoe factory».

It is to be reiterated that our grasping and later comprehend-

1. ISBN 978-972-20-1938-5; 230x290x6mm; paperback with flap; full colour; 64 pages

2. ISBN 978-989-557-024-9; 220x275x8mm; hard cover; full colour; 36 pages

3. ISBN 972-95593-7-6; 245x185x10mm; hard cover; full colour; 48 pages

4. ISBN 972-99243-1-7; 320x160x8mm; hard cover; full colour; 24 pages

5. ISBN 978-972-47-3803-1; 220x285x8mm; hard cover; full colour; 32 pages

6. This title is a bilingual edition, written in both Portuguese and English.



**F1.** Catarina looking at the cover of *Come a sopa, Marta! [Eat your soup, Marta!]*.

ing of something new is always contaminated by our personal referents, which are thus responsible for the value-judgements we constantly make. In this example Mariana recognized a certain object because of the frequency with which she interacts with it in her life. In the next example we find the opposite.

Come a sopa, Marta! [Eat your soup, Marta!] tells the story of a little girl called Marta who struggles to eat her soup. Catarina, the most participative of the state school 5-year-olds, in this particular case trying to imitate the researcher's questions and intonation, said: «Does anyone know what this is?» pointing to a spoon holding some green liquid on the cover illustration (Figure 1); Bernardo replied that it was soup, which led to some confusion and the following dialogue developed:

Bernardo: «It's a spoon with soup.»

Catarina: «No.»

Bernardo: «Yes it is.»

Catarina: «Soup's not like that, soup's yellow.»

Researcher: «What did Bernardo say? Bernardo said it was a spoon with some soup.»

Catarina: «But it's just that soup isn't that colour.»

Researcher: «Oh isn't it?»

Catarina: «No.»

Researcher: «Soup is yellow?»

Catarina: «Yes.»

Mafalda: «It's green too.»

In this case the colour didn't help Catarina recognize she was looking at soup on the spoon. Queried about the same part of the illustration, all other boys and girls had no doubt that it was soup. But it wasn't simple for Catarina, though she understood the character was eating something. When Catarina was asked what Marta might be eating she replied: «It's something green...» and after a further attempt at clarification from the researcher, she speculated it could be «jelly». When her peers rushed to tell her it was soup she immediately denied the possibility since «soup's not this colour». The colour, which to the other children had been a valuable clue, wasn't enough information for Catarina to successfully decode the visual message (since the verbal



**F2.** Double spread of the picturebook *A charada da bicharada [The Animal Charade]* where the hidden animal, waiting to be found, is a zebra.

message was useless as these children couldn't read words). The image inventory each of us keeps and which helps us to recognize so many other images is «el resultado de experiencias y oportunidades diferentes» (Andricáin, 2005, p. 39), so it can be inferred that Catarina's resistance and subsequent difficulty in interpreting the illustration is due to small or no variety of soup-colours in her referential archive.

In the private school, with the group of 8-year-olds, there was an example where colour helped solve an enigma. In the picturebook *A charada da bicharada [The Animal Charade]*, a collection of animal-themed poems in the form of riddles is accompanied by an illustration. On the double-spread where the hiding animal, waiting to be found, is the zebra (Figure 2), it was colour that helped some of the more sceptical children to recognize it.

Researcher: «What do we usually call *passadeiras* ?7»

Ganicho: «Zebras.»

Researcher: «Zebras.»

Mariana: «I don't say that.»

Researcher: «You don't?»

PJ: «Because they're black and white.»

Not all children were acquainted with the double meaning of the word zebra – it wasn't a part of their life-experience – some only knew the animal and few associated it to the painted lines on the road for people to walk across. PJ's contribution, about the colours of a zebra-crossing, would help to justify the chromatic association with the animal's stripes for Mariana, who did not have that information in her referential archive. Reiterating that the main characteristic of the referential archive is its constant muta-

7. The Portuguese word for zebra-crossing, *passadeira*, in no way reminds us of the animal, that's why we've decided to keep it in the dialogue.

tion, where the images start dialogues with each other, combining to make different conceptions and potentiating learning. Thus, it seems possible to assume that from now on the double sense of zebra will be recognized, allowing these readers to make new and renewed interpretations.

Mafalda, a 5-year-old in a state school, chose as her favourite cover illustration that of *O sonho de Mariana* [Mariana's dream], a book about a wonderful journey with a strange bird, looking at the water cycle in fictional form. She chose this illustration «because me and my sister Mariana, one day, when my dad had the car we went to see some animals and there was a bird with a yellow beak» and, indeed, the cover has on it a bird with a yellow beak. Iara, 11-years-old from the same school, on the other hand, chose the back cover of the same title as her favourite because it reminded her of «when (...) I was little and played with those little kids' toys». In tune with Iara, Joana, also 11-years-old from the same school, choose the same back cover saying that «the book was this one because like [Ricardo] said, he spoke about little kids, well, he was a kid too and he must have played with cars and that. And we were kids too, so like Iara said it reminds me of when we were small». Leonardo, of the same group, was not only influenced by his past but also foresaw influencing the future generations. He preferred the back cover of *Come a sopa, Marta!* [Eat your soup, Marta!] «for two things, when I was a baby I used to eat soup, this reminded me of before. And future generations of my children, my grandchildren, my great-grandchildren, my great-great-grandchildren... will eat it. If they exist.» (Figure 3).

**F3.** Leonardo looking at the back cover of *Come a sopa, Marta!* [Eat your soup, Marta!].



In the very first minutes of meeting 5-year-old Tomás, in the private school, he announced he loved animals, especially dinosaurs. In the following conversation, while he was leafing through

the illustrated book *Estranhões & Bizarrocos* [Weird and Bizarre Creatures], a collection of tales that journey through a world, as the title would suggest, of impossible or at least unlikely things, his interest is clearly more than superficial.

Mariana: «Look, a man.»

Researcher: «A man?»

Beatriz: «It's a camel!»

Mariana: «No, here. A man. I think it's a man.»

Tomás: «No, it's a dromedary, its only got one hump. This is a dromedary.» - gets up and stands while he explains

Mariana: «It looks like a camel, because its the same.»

Beatriz: «Because this was the dad and this was the son.» - pointing to the big dromedary close up in the picture, and the little one in the far-off, respectively.

Researcher: «But look at what Tomás says...»

Kitty: «Dromedary...»

Mariana: «Dromedary...»

Tomás: «Because it was a dromedary...»

Researcher: «But what's the difference?»

Mariana: «It's got books.»

Tomás: «The camel has two [humps] and the dromedary only has one [hump].» - showing with his fingers the number of humps

Researcher: «Humps? Those little humps on their back, look!»

Beatriz: «Because they drink a lot of water.»

Researcher: «Oh do they?»

Tomás: «They do.»

During the session, Tomás, who was also a quiet, rather shy boy, intervened very little verbally although he was attentive and interested in the books and his peers' observations. In this episode in particular the image recording, more than just the sound, was revealing and very important because, when his colleagues wrongly named the animal, Tomás not only contributed his opinion verbally but emphasized his certainty by getting up and standing while he explained to his peers the difference between a camel and a dromedary (Figure 4). It is important to underline the fact that Tomás, and all his peers, could not read the words for confirmation in the verbal text that the illustration indeed showed



**F4.** Tomás explaining the difference between a camel and a dromedary.

a dromedary, neither did they show signs of wanting to. However, once the interview was over, it was noted that the title of the tale in this particular illustrated book, contains the word “Camels” *Sábios como camelos* [Wise as camels] and thus indicates the story is about a camel and not a dromedary. Happily the certainty and correction with which Tomás instructed his peers wasn’t undermined, as indeed the illustrations show a dromedary, not a camel. A discussion about the connection between word and image would take us into more sensitive questions about the formative role of the illustrator (among other things) that don’t have a pertinent place here, nevertheless, it is important to highlight the importance of this topic.

In short, past experiences noticeably influenced some of the children’s tastes in relation to selecting and discussing illustrations, but it was also evident that the interests of some children became learning moments for the others (Vygotsky, 1986). Their verbal and non-verbal responses were a reflection of previous multi-sensory experiences. As can be seen, there are several factors that play a relevant part in an individual’s learning and that influence future ways of using their senses. The meanings attributed to everything seen, read, heard and ultimately sensed are largely determined by the culture in which each of us grows up. Understanding and interpreting available clues in the words and illustrations depends on who we are, where we are, what the text has that we need and how we relate to those variables at any given moment. For this reason the same verbal and/or visual text can have innumerable interpretations, depending on who emits (also the possessor of a particular referential archive), receives and perceives it.

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# PICTUREBOOK CONSUMPTION

A caterpillar's cultural menu



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## Abstract

This text discusses picturebooks as objects of cultural consumption. Our paper focus on 'authorstratored' books, due to their characteristics as project, process and object. Their specificities, as freedom, innovative visual narrative, identity's self-construction and personal statements, are brought to debate in order to understand these publication's boom and their ongoing demand in editorial universe and its consumers.

Authorship is approached as a self-design and construction tool for the artist (illustrator and/or designer) and subsequently for the other – child or reader.

We take on a metaphor (the silkworm and its silk cocoon) to illustrate the production /consumption cycle as a process to build identity, to enrich, change and grow wings in a cultural and metaphoric sense.

The concept of illustration's auto-graphic style is also considered - as a 'visual signature' - which allows us to empathize with the book design as an extended and more complex process of meaning for the author.

In this framework, we aim to understand which were the technological and visual culture conditions that put forward authorstrators to the scene and underline the weight of these productions

## Keywords

'Authorstrator',  
Picturebook, Consumption,  
Visual Culture.

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## Introduction

Narrative fiction is the driving force behind the picturebook industry where «approximately 50 per cent of young audience fiction is both written and illustrated by the same individual.» (Male, 2008: 162). This field of practice, due to its freedom in creative processes and contents, attracts visual communicators and offers the most significant opportunities for authorship.

Most of these professionals will proclaim unusual, varied and disparate combinations as “illustrator-writer” or a “illustrator-designer” status (Male, 2008:5).

Illustration's theoretical production has been reflecting on this subject and the concept ‘Authorstrator’ - a portmanteau for author + illustrator- recently emerged (first used by Martin's Salisbury student Sarah McConnell (SALISBURY, 2008:12)) to define illustrators and/or designers who had complete authorship (story/design/narrative/ illustrations) of their book.

Authorstrators can, therefore, be regarded as new hybrid storytellers who put their practical and intellectual transferable skills on their books - always working towards expressing their own visual language and messages to thrive in this creative outlet. Amongst these practical skills we'll find technological proficiency embedded in their work. Technology is playing an important role in two major fields - that allow picturebooks to grow and blossom: the availability of digital image treatment software and the growth of the publishing industry, with the increasing ease of producing and presenting books as objects of mass consumption.

In our Technocratic societies there's a predisposition to understand this recent boom in picturebooks as a mere consequence of the arriving (or ongoing) age of visual thinkers held back by the enormous possibilities of advances in image-making software and the great leap in industries that make editing, printing and publishing a book a profitable and fast chain of production.

So, advances in technology are responsible for providing tools and turning this ‘authorstratored’ picturebooks into real objects, but what keeps fueling the audience's demand at a time where classic literature (books) and day-to-day info (in magazines and newspapers) are mostly consumed as digital text? I believe the answers lies both in the form of the picturebook - as an object of desire - and in an audience eager to collect narratives and objects

that will help them construct identity (as we'll see further ahead) while maintaining an updated visual culture.

One might say postmodern demand and means of production ‘made’ the Authorstrator? Not quite. Long before Shaun Tan, Oliver Jeffers, Sara Fanelli (among others), become celebrities in the editorial universe, we had authors such as Peter Newell and his *Slant Book* from 1910, approaching this issues. Newell's example (and its recent success) shows that this ‘new-found’ originality is not a mere consequence of going through doors opened by progress in technology, but rather a new development in heritage - a new word to define a new species in a Darwinian tree of natural selection of Book Design.

The state of the art concerning the Authorstrator issues are closely related to Illustration studies which reflect on the practice and methods of their producers - illustrators and designers - and that are becoming more numerous, but, so far, we only came to known works that address the role of these professionals when they respond to a commission; in other words, when the problem's briefing is linked to the transmission of a verbal and linear narrative. These works approach, in fact, the questions about authorship but in response to the otherness of the text through the selfhood of image (Quental, 2010:322). In addition, the study of Illustration issues, while particularly well-documented, consists of publications that concern overall authors and pictorial movements published like monographs, or technical manuals on how to be an illustrator or how to do illustration - Steven Heller and Marshall Arisman being the most productive.

The majority of recent production arises from English spoken art / academic communities, so books and papers coming from U.S. and UK universities are responsible for a greater part of the reflection in theoretical and formal training. Publications specific to this subject are more often the result of academic thinking from these universities and professional assignments. English as a universal language, also gives rise to specialized magazines with sufficient audiences to sustain and continue production, such as *Varoom* (from AOI Association of Illustrators), *The Nose* (de Steven Heller in NY) or *3X3* The magazine of contemporary illustration.

In a Portuguese context, the theoretical discussion on Illustration

tion, has been summarized (also) by artists and scholar chronological monographs - as in Theresa Lobo's study: "Ilustração em Portugal I. 1910 - 1940" - or as in other works (investigations that have given rise to recent theses) where the approach to Illustration is made on the perspective of their younger readers (Sandra B. Lopes "Estudo da Ilustração Infantil Artística e sua adequação às Crianças" and Cassia Domiciano "Livros infantis sem texto, dos pré-livros aos livros ilustrados") and also from the perspective of Illustration as interpretation of a text from another author (Joana Quental "A ilustração enquanto processo e pensamento. Autoria e interpretação").

Illustration, therefore, has been approached via audience readability and from the point of view of the designer/illustrator who answers graphically to a brief or text given by someone else. A sustained study on authorstratored picturebooks will have to combine both Illustration and Book Design in a holistic perspective without hierarchies.

### Picturebooks as the authorstrator cocoon

In a former communication I've spoken about the auto-graphical style as a concept where each author's work in illustration is, in great measure, a mirror, with their own self-portraits - their uniqueness reflected into what they do and stand for, - like a painted biography or a "visual signature". Following this idea we have to acknowledge that if an illustration can give us an insight into its author, a book, as the outcome of choices in illustrations, narrative, design and story selected with artistic freedom, speaks



**F1.** "The Very Hungry Caterpillar" is an example of an authorstratored picturebook by Eric Carle in 1969.



to us as a personal statement - as an object that embodies its author's identity. This self-constructing action and projection of self through one's expression is familiar to all art forms: «Karl Marx once said that Milton had written Paradise Lost as a silkworm

produces silk, as a projection of it's own nature. »  
(David Brooks, 2012: 429)

Taking this beautiful metaphor into account we'll find that in order to assimilate knowledge and define themselves, authorstrators are producing, as a silkworm does, their own microcosms (cocoons if you like) in the shape of picturebooks, and as they objectify their nature and message they bring their unique iconosphere, stories and values into existence, providing substance / tangible matter, to the construction of self, continuously enriching their personal development and metamorphosis as individuals.

It is currently impossible to overlook the importance of these publications in our culture: we're talking about prized books, celebrity authors, well-known stories globalized by films and animation - such as Maurice Sendak's "Where the Wild Things Are", Shaun Tan's "Lost", Brian Selznick's "The Invention of Hugo Cabret".

Design History or Art Critique will eventually discuss if picturebooks are Art forms, Design objects or both, all we need to underline, for now, is that somehow authorstrators were (and are) able to look to Book Design from "outside of the box" and break from traditional children's layout and content (Heller, 2008:421). Why? as mentioned earlier, picturebook innovation is linked with technology advances, especially those achieved by the Adobe empire that allow the authorstrator to be a hybrid professional with digital expertise: he combines design, illustration and typography in new ways. And last but not least, as foreseen by VanderLans, the new paradigms in Visual Communication will be less about a deliberate visual change (in graphical innovation) but rather about the way Design is being produced or by whom (Vanderlans, 2002: 184). From our perspective, authorstrators are leading these changes because, as artists, they are free from commission and able to approach their project through new meaningful ways of self Design.

Self Design, or redesigning oneself, as Bruce Mau announces (Berger, 2009:239) is the ability to "impose meaningful order" (a Papanek's concept to Design definition) with the purpose of being proactive in designing one's life. Picturebooks are dynamic storytelling objects, like narratives paths in a photo album, set in specific order by their 'curator' - maybe it's no coincidence that in



**F2.** Authorstratored picturebooks that where adapted to make films: "Maurice Sendak's "Where the Wild Things Are"; Brian Selznick's "The Invention of Hugo Cabret" and Shaun Tan's "Lost".

Europe we call picturebooks “illustrated albums”.

As authorstrators put into action the Aristotelian ideal that “we are what we do”, so do readers as cultural consumers personify “we are what we eat”.

## Picturebooks and cultural consumption

*«Language and the written word are no longer the sole guarantee of knowledge and truth. Nowadays people are much more inclined to rely on images when they want to acquire new scientific and cultural insights. We speak of “iconic turn” and the “pictorial turn”, meaning that interest is being focused on images – on their potential and promises.»*

*(Robert Klanten, 2005:4)*

We’ve spoken about technology as one of the responsible factors for picturebooks boom - for it’s clear that the iconic or pictorial turn has a direct proportion with the digital turn, but one must not forget that a product is only this successful when its audiences/ consumers make it so. In our increasing visual world, with cultural postmodernist shattered societies and individuals, objectification and consumption have become the ways by which people construct (through a Bourdieusian appropriation) their own narratives. Endless Branding and Emotional Design led us to the feeling that in order to be we must consume or appropriate the things that we relate to or define us.

In his book “The Third Wave” Toffler (1984:385) points out two concepts that illustrate what we’ve been exposing: the author as prosumer (producer and consumer) and the reader as an individual in need to configure the self. Another aspect important for understand the eagerness of consumption is the fragmentation that new media has brought us - we no longer have meta-narratives from where to choose a coherent self, instead, we’re supposed to collect and build our own identity. Consequently, while authors are producing their own identity, shaped as a picturebook, they also allow others to relate to, identify themselves with, and appropriate different voices to construct their own coherent and singular identities – as a rich and personal collection of narratives.

Daniel Miller’s notion of culture as objectification on Con-



F3. “Incredible Book Eating Boy” Oliver Jeffers,

sumption and Commodities (Miller, 1995:143) talks of how «for many people the entry into consumption is also seen as their entry into self-conscious modernity» or self-conscious postmodernity to be accurate with our time. This search for culture is both a need for individual structure and for group belonging - sharing the same values, understanding the same symbols.

*«adults in industrialized societies who do not achieve individual literacy are seriously marginalized in many ways.»*

*(Robert Serpell)*

Picturebooks, have a long story to tell from their starting point with Comenius Orbis Pictus, to Shaun Tan’s (recently ALMA awarded) The Arrival, with the link between them being a long-standing pedagogical function. Since Comenius encyclopedia and right through the classic authors and traditional fairy tales, authorstrated books, were the ‘medium is the message’, picturebooks convey the lessons of their time. It’s no different today, and parents are aware of this.

*«Bourdieu himself appears to place economic capital at the root of other capitals (...) Parents invest in their children, which enables those children to increase their human capital, which then enables them to gain greater economic rewards.»*

*(Elizabeth B. Silva and Rosalind Edwards)*

Authorstrators are also contributing with content and their “Sophisticated tastes” (Salisbury, 2007:12) to fulfill an empty space left by Fine Art - as aesthetical nourishing.

Picturebooks, specially the authorstrated ones, are no longer following the traditional recipe: the assemblage of cuddly images on facing pages subdue to text. Nowadays it’s quite the opposite: where illustration is concerned, we find close relation between sweetness and lack of conceptual content: many authors describe this “richly sensory”, cuddly, decorative and sentimental visual styles as eye candy (Soar, 2000:35), ‘chocolate box’ or ‘cheese-cake’ (Male, 2008:80) - in a broad sense, we could even say that the sweeter it gets to the eye the savorless it becomes to the brain. Therefore, the ‘sophisticated tastes’ are expressed through intelli-



F4. “K.O. à Telaviv”  
[self-portrait with his son] Asaf Anuka, 2012.



gent composition and visual metaphors but also in the boldness of chosen themes, such as Svein Nyhus' illustrations for "Mummy's hair" - a picturebook about depression.

So, as vanguard artists turn to more anthropological issues aiming at an elite art public, most picturebooks are coming 'down to earth' to handle day-to-day themes, abandoning paternalism and embracing this task in the way of personal reportage or escapism for larger audiences.

Picturebooks have a unique link with their visual culture zeitgeist, and to select some of these for our libraries is like choosing our own particular diet of favorite graphic styles, authors and themes. No wonder, therefore, that the picturebooks industry continues to produce this objects of desire (Hall, 2008: 145), that audiences (adults, children and artists) see as 'must have' commodities (Withrow, 2009:182).

As objects of consumption, authorstratored picturebooks are catering 'innovative' mark making both as graphical expressions (through various auto-graphical styles) and exploring new visual narratives in storytelling (more related with the book specificities as product design and visual communication and not so constraint by verbal content).

This practice of self-commissioned picturebooks has brought the author-illustrator a new professional status that allows them to escape and transcend the role of commissioned 'hack' (Male, 2008:11) and/or 'colouring-in technician'. These books embody an author's manifest against the traditional illustrator and designer role: the art directed, trend conformed, 'chocolate box' and 'cheesecake' silent cooker, is now a visible professional, an 'household' name (Male, 2008:146) and trend forecaster chef to be considered in our increasing visual culture and communication society.

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# RESULTS OF A STUDY ABOUT THE NARRATIVE CONSTRUCTION BY IMAGE



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## Abstract

Part of a research about visual narrative that has the picture book as an object of study. The proposal is present the results from an analysis based on the hypothesis of a proximity between the Illustration and the Performing Arts. This choice was made because of the similar characteristics between the two objects: the discourse represented by the absence of verbal language. This approach involves analyzing the picture book from the perspective of textual absence as an alternative to the tradition of critical and theory of narrative that privileges the verbal text.

## Keywords

Picturebook, Clown Mime, Theatre, Illustrated Book, Absence, Language, Discourse and Narrative.

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## 1 • Introdução

Este trabalho é um recorte da dissertação de mestrado “Livro de Imagem e Palhaço Mímico: narrativas sem palavras? Estudo sobre a narrativa por imagem” defendida na Pontifícia Universidade Católica do Rio de Janeiro, no Programa de Pós-graduação em Design e dedica-se a aprofundar os estudos sobre o Livro de Imagem – objeto específico caracterizado por uma sequência de imagens, sem veiculação de texto verbal, mas com conteúdo narrativo, organizada no suporte livro.

A trajetória de pesquisa nessas áreas – Literatura, Artes Cênicas e Design – permitiu constatar que a tradição da teoria e técnica narrativa privilegia a linguagem textual ou, quando aborda a narrativa híbrida, hierarquiza o texto em relação à imagem. Assim, a narrativa que contempla imagens demanda estudos que deem conta das suas especificidades, e das suas relações contemporâneas com outras linguagens.

Foi necessário um recorte nas áreas contempladas para viabilizar maior aprofundamento no estudo. Na área da Literatura optamos pelo Livro Ilustrado, e especificamente o Livro de Imagem, como exemplar de um objeto composto unicamente por imagens, nas Artes Cênicas estudamos o Palhaço, mais detalhadamente aqueles que adotam como técnica a mímica: o Palhaço Mímico .

A escolha do Livro de Imagem como objeto de estudo, e o Palhaço Mímico como contraponto, dá-se pelo fato de que ambos possuem uma característica em comum: a ausência de um elemento culturalmente esperado no livro e na cena: a representação do texto – escrita ou oral. Apesar de mencionar o Palhaço Mímico e ter sido feita uma análise mais aprofundada, por restrições de tamanho deste artigo, não foi possível apresentar a metodologia que gerou tais resultados. Por entender a importância de se ter acesso à metodologia e ao desenvolvimento da pesquisa, e levando em consideração as restrições de tamanho deste artigo, optou-se por priorizar os resultados desse estudo ao invés do desenvolvimento da pesquisa, mas convidar aos interessados em consultar o conteúdo da pesquisa na íntegra, cujo referencial estará disponível ao final deste artigo.

Assim, as narrativas construídas exclusivamente por imagens são um fenômeno exemplar da questão central da pesquisa: o

fenômeno da ausência. Ausência suscitada pela exclusão de um elemento que seria de uso tradicional em um dado suporte. Por conta desse aspecto, trazem em si o desafio de uma metodologia alternativa para o panorama de dependência do texto.

O enfoque proposto para a abordagem se estrutura numa reflexão sobre a ausência do texto verbal na construção narrativa. Opta-se pela perspectiva da ausência, como enfrentamento à dimensão afirmativa da linguagem. A pesquisa é extensa e aqui será apresentado um dos resultados desse processo: as categorias encontradas a partir da análise do objeto pela perspectiva adotada. Como ponto de partida para a elaboração das categorias, temos a reflexão conduzida ao longo da pesquisa que resulta na análise da relação entre três linguagens – verbal, visual e gestual –, e as características e/ou recursos para o desenvolvimento de narrativas que ontologicamente pertencem a cada uma delas.

Podemos colocar que a abstração conceitual – como a definição de uma dimensão psicológica, emocional de um personagem, bem como a atmosfera e a classificação de um estado diferenciado de consciência – é originariamente afim à linguagem verbal. Ou seja, a possibilidade de descrever questões abstratas conceituais verbalmente é mais usual culturalmente, do que tentar demonstrar isso visualmente ou por gestos – o que, no entanto, não é indicativo de que a vocação do texto seja impedimento para a representação pela imagem ou pelo gesto – apenas indica uma conexão ontológica.

Da mesma forma, a representação do deslocamento tempo x espaço, possui recursos mais imediatos na linguagem gestual. É inegável a eficácia de representar o movimento pela linguagem gestual – pelo corpo – quando comparada às linguagens verbal ou visual.

E cabe à imagem características voltadas à representação espacial/visual – cenários, figurinos, aspectos físicos do personagem, elementos de cena, iluminação[1]. O ato de representar espacialmente encontra na linguagem visual uma eficácia maior na representação do que as propostas de representar um objeto, um cenário, pelo gesto ou mesmo descrever uma cena na linguagem textual.

Como resultado do cruzamento entre estas três linguagens, temos a tabela a seguir:

**F1.** Tabela da relação entre as linguagens e questões próprias à narrativa.



A partir desse cruzamento dirigimos a atenção para as questões que estão ou não presentes na linguagem visual, mas que são igualmente importantes para o desenvolvimento da narrativa. Depois, fizemos outra abordagem que partiu da ausência de determinadas características na linguagem visual, para compreender de que maneira essas questões são resolvidas em uma narrativa exclusivamente visual. Por último, buscamos compreender porque em alguns casos o autor propõe determinadas ausências na própria linguagem visual, aspecto preponderante no Livro de Imagem.

## 2 · Os livros analisados e os grupos de categorias

Os livros foram organizados a partir de acervo pessoal do pesquisador e do laboratório que reúne publicações nacionais e internacionais, inclui exemplares premiados tanto no Brasil quanto no exterior e a maioria publicada na última década. A reunião da amostragem não buscou uma representatividade quantitativa, mas apenas uma primeira imersão para o estudo e um objeto de análise qualitativa.

Por questões didáticas procuramos reunir todas essas questões em três grupos e na seguinte ordem: Relação tempo e espaço na imagem, Sugestão de abstração conceitual e Ausência na imagem. Cada grupo reúne questões próprias à ausência respectivamente da linguagem gestual, textual e visual.

Apesar da enorme contribuição de Linden (2011) e Nikolaeva & Scott (2011) para a compreensão da expressão do tempo e do espaço, esses conjuntos de categorias abordam algumas das

questões colocadas em ambas as análises. E busca, somando a elas, compreender de que outras maneiras são propostas pelos autores de livros de imagens a relação e representação do tempo e do espaço. Assim questões como “instante capital”, “instante qualquer”, “instante movimento”, “códigos gráficos”, “sucessão simultânea” repercutirão nas categorias propostas sem contudo uma exata similaridade.

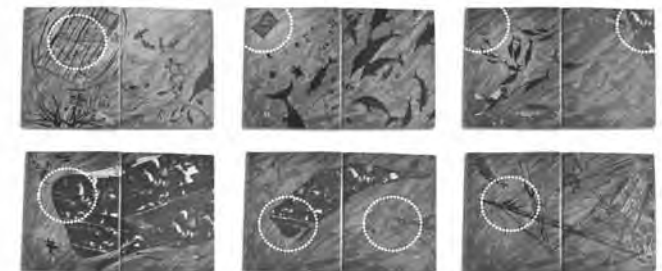
### 2. 1 · Relação espaço e tempo na imagem

**Movimento do Quadro:** Semelhante a câmera de cinema, a ideia de que a página delimita um ponto de vista, e seu movimento sugere que ela acompanha o deslocamento do personagem no espaço – acompanha o percurso da trajetória.

**Ponto fixo ou Âncora:** Como na Física, só é possível analisar o movimento e o deslocamento de determinado objeto segundo uma referência.

Ponto fixo caracterizamos determinado elemento que torna-se referencial para perceber na sequência de imagem a sugestão de movimento.

Âncora também dá a ideia de referencial para a continuidade narrativa, mas, diferentemente do ponto fixo, pode apresentar alterações ao longo do passar das páginas – alteração no próprio elemento, ou mudança de elemento. É claro que pela proximidade desses dois itens e pela sutileza em sua diferenciação, pode haver sobreposições em alguns casos.



**Quadro fixo:** Este é um caso característico que utiliza o próprio quadro como ponto fixo. Assim, funcionando de maneira semel-

**F2.** Exemplo de âncora encontrado na sequência de imagens no fundo do mar. Da primeira imagem no alto a esquerda, até a terceira imagem permanece a figura da jangada como referência de profundidade e deslocamento, em seguida a figura da baleia e por fim o barco. (VILELA, Fernando. A toalha vermelha. São Paulo: Brinque-Book, 2007).

hante ao palco italiano clássico no teatro, que tem o espaço físico fixo e determinado, onde os atores entram e saem da cena . A perspectiva do quadro permanece fixa enquanto os personagens se deslocam por esse espaço.

História em Quadrinhos: Sugestão de movimento pela sequência de imagens delimitadas por molduras internas ao quadro principal (página dupla). Este é um caso em que procura-se pontuar um determinado movimento, dentro da cena geral que está sendo mostrada pelo quadro da página inteira.

Plano e Contra Plano: A noção de plano e contra plano no cinema origina-se da sugestão de representar a perseguição [2]. Nessa situação percebe-se tanto a ideia de perseguição quanto, de maneira geral, o deslocamento dos personagens pelo espaço. Descontinuidade temporal: Este ponto apresenta a ideia de um deslocamento para um momento específico no tempo – noção conhecida como analepse. Como bem nos pontuou Linden [3], não é um recurso frequentemente encontrado.

Gestual: Propõe na representação do gesto, da posição corporal, a sugestão de movimento. Neste caso, cabe relembrar os estudos de Lecoq [4] para o desenho do movimento corporal, e as linhas de ação que orientam a posição do corpo na preparação, antecipação ou execução do movimento. É presente a sugestão do movimento pela representação de uma posição não natural do corpo – que implicaria um esforço enorme ou uma impossibilidade de sustentação.

Linhas de leitura: As linhas às quais nos referimos no ponto acima também estão associadas à composição geral do quadro. Esse ponto foi abordado com mais profundidade por Rui de Oliveira [5]. As linhas proporcionam um caminho de leitura no qual pode estar presente não só a noção de movimento mas também a ideia de sequência, de continuidade.

Distorção da forma: A distorção da forma tem relação direta com as duas categorias anteriores. No cinema de animação essa distorção é amplamente utilizada e conhecida como sendo um dos princípios da animação tradicional para reforço da representação de movimento: Squash and Stretch. Esse recurso é utilizado tanto na gestualidade do personagem como reforçado pela linha de ação.

Representação pela parte: Sugere o movimento por uma representação como índice. Nesse caso poderíamos visualizar alguns exemplos: um elemento que por não ser apresentado de maneira integral sugere uma movimentação – a omissão de determinada parte é consequência de um movimento específico. Ou a posição de uma parte desse elemento só seria possível através do movimento, também como consequência dele.

Representação Corporal da trajetória: Recurso que propõe reproduzir no corpo a trajetória de determinado movimento. A ideia é espelhar o movimento de um elemento em outro, com intuito de reforçar sua representação.



Repetição do elemento: Reprodução na mesma cena de um elemento em diferentes posições, que no conjunto sugerem a noção de movimento ou deslocamento temporal x espacial. Neste caso, a sequência é apresentada sem nenhum tipo de delimitação formal (como na história em quadrinhos).

Códigos gráficos: Elementos que por convenção representam determinado tipo de movimento ou ação. É o caso, por exemplo, de linhas que demarcam a trajetória ou reforçam o movimento, borões e “nuvens de fumaça” que sugerem a poeira levantada pelo movimento etc.

Narrativa Cíclica: Classificamos como cíclico ou repetição quando percebemos dentro da narrativa dois trechos bem semelhantes no que diz respeito ao conteúdo da história narrada.

Um caso específico é o retorno do conflito principal da narrativa ao final da história ou, quando apresenta o mesmo conflito com características diferentes da primeira narrativa.

**F3.** Personagem segue a fruta acompanhando a direção do movimento da mesma, sugerindo com a cabeça e o corpo a trajetória que ela faria. (CÁRCAMO, Gonzalo. Gelo nos trópicos. São Paulo: Companhia das Letrinhas, 2011).

Em casos extremos o final da história coincide exatamente com o momento inicial do livro (mesma imagem).

Onomatopeias: Essa categoria inclui elementos textuais e estaria fora do recorte desse trabalho. Porém, optou-se por fazer também essa abordagem porque as onomatopeias aqui foram consideradas como códigos visuais abstratos – sem vínculo com nenhum significado específico que não a reprodução sonora.

**F4.** Exemplo de ausência de representação do cenário sugerindo o isolamento e a solidão da personagem. (LEE, Suzy. Espelho. São Paulo: Cosac Naify, 2009).



Outro tipo de isolamento é a ausência do personagem, o foco está na ambientação e no clima dado à cena.

Alteração gráfica: Mudança de técnica, ou mudanças na paleta de cor, da iluminação, do estilo e diversos tipos de alterações gráficas, proporcionam um estranhamento visual em um determinado trecho da narrativa. Esse estranhamento tem objetivos, em sua maioria, de procurar transmitir questões conceituais ou abstratas: sugestões de mudança de clima ou atmosfera; representação do estado psicológico/emocional, ou alteração no seu estado

## 2.2 · Sugestão de abstração conceitual

Isolamento de elemento narrativo: o isolamento de certo elemento gráfico proporciona uma espécie de foco em determinada ação ou situação, bem como o foco em algum conceito abstrato relativo ao personagem – emocional/psicológico. Esse isolamento pode se caracterizar pela ausência do cenário, recorte de determinada ação ou situação. Encontraremos similaridade no teatro com a ribalta, ou foco de luz que destaca certo elemento ou momento da cena.

de consciência.

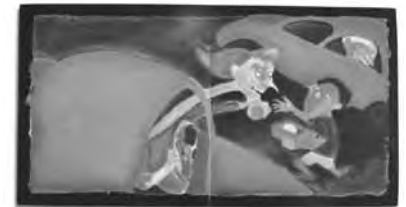
Gestual: A possibilidade de também sugerir conceitos abstratos pelo gesto. Essa sugestão pode ser feita de diferentes maneiras, dentre elas: sequência de imagens – construção visual da emoção da personagem de maneira gradual e sequencial; linguagem corporal – expressões corporais pontuais que sugerem determinada emoção. Sobre isso Lecoq, quando aprofunda o estudo dos quadros mímicos, pontua a tentativa de representar estados emocionais do personagem. [4]

Reforço por semelhança: A maneira como representa os aspectos psicológicos e emocionais do personagem na categoria anterior podem ser reforçados na semelhança formal de outro elemento igualmente importante na narrativa. Numa espécie de paralelismo, proporcionado pela repetição ou similaridade da forma geral dos dois elementos.

Convenções gráficas: A utilização de convenções gráficas para a representação de questões abstratas conceituais. Elementos como estrelas, corações, traços, nuvens, raios, procuram de maneira codificada representar: tontura, dor, amor, raiva, felicidade etc. Apesar de alguns elementos serem próprios da linguagem gestual, são hoje comumente utilizados pela linguagem gráfica como códigos: aperto de mão, braços cruzados ou representação de expressões fisionômicas.

Convenções Internas: As convenções gráficas supõem um conhecimento prévio. Essa categoria aponta para convenções produzidas dentro da narrativa. O que dá a entender que fora da narrativa tais códigos não teriam necessariamente o mesmo significado, nem o mesmo entendimento.

**F5.** Distorção formal da personagem para sugerir seu estado emocional. (LAGO, Angela. Cena de rua. Belo Horizonte: RHJ, 1994.)



Distorção formal: Estranhamento formal proposto por deformações da proporção – o tamanho de um personagem apresenta-

se de maneira desproporcional em relação aos outros, ou ao espaço. Na forma – sugestão de estados psicológicos emocionais pela deformação física. E metafórica – representação total do personagem por um objeto, animal ou outro elemento que sugira que a condição emocional/psicológica do personagem seja parecida com as características do elemento escolhido para sua representação.

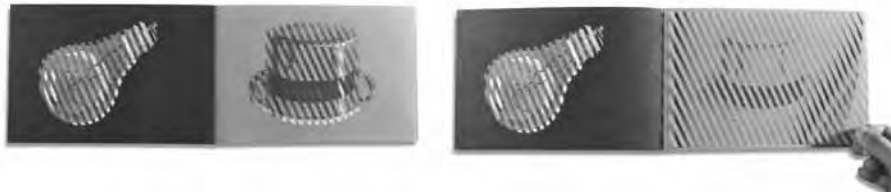
**F6.** Neste exemplo o livro é apresentado com imagens compostas pela sobreposição de duas figuras. Acompanhada a obra, um acetado com tarjas, que ao colocar sobre a imagem, permite a visualização das figuras separadamente. (FOLL, Dobroslav. Assim ou Assado?. São Paulo: Cosac Naify, 2011).

### 2.3 · Ausência na Imagem

Ausência pelo ponto de vista: Alguns elementos da narrativa ficam fora do quadro. Essa omissão é entendida como um recorte da realidade – onde nem toda a cena é mostrada.

Omissão por recursos do suporte: Esse tipo de omissão/revelação pode ser proporcionado por recursos do suporte livro, que permitem esconder/mostrar determinados elementos – dobras, pop-ups, facas, entre outros.

Tanto a Omissão por recursos do suporte como a Ausência pelo ponto de vista podem proporcionar surpresa – na revelação de algum elemento ou personagem que estava presente mas não era mostrado, ou na reelaboração da significação da cena pela revelação da parte omitida.



Ausência total ou parcial da imagem: A ausência total de elementos na página pode sugerir pausa, interrupções ou silêncio. A ausência total ou parcial pode proporcionar a ideia de metalinguagem, por representar a materialidade do suporte (papel) em sua condição original.

Em alguns casos foi pontuada a mesma categoria em mais de um grupo, por proporcionar questões específicas relativas àquele conjunto. Demonstrando que um elemento ou recurso específico pode apontar para objetivos diferentes. Assim, podemos então afirmar que essa organização não exclui a possibilidade de



sobreposições entre as categorias analisadas, nem muito menos a conjunção de diferentes categorias no mesmo elemento.

Esse artigo privilegia a síntese dos resultados da pesquisa integral, de tal maneira que inevitavelmente se excluiu e se simplificou diversas questões mais profundamente desenvolvidas no trabalho original. Esses três conjuntos apresentados tentam organizar categorias propostas a analisar os livros de imagem no seu desafio original de narrar uma história sem o texto escrito. Procurando através da perspectiva da ausência, representar pela linguagem visual questões que estariam ligadas ontologicamente às outras linguagens. Além da contribuição prática e teórica das categorias, esse artigo também tem a função de mediar uma aproximação com as outras etapas dessa pesquisa.

**F7.** Representações de partes amassadas/queimadas da página, ausência que remete à materialidade do suporte (papel). Fonte: GEDOVIOUS, Juan. Trucas. México: FCE, 1997.

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# WeCoOP

A cooperative game for autist children



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## Abstract

Autism is known for affecting children's communication abilities. In order to improve those limitations, a didactic game, WeCoOP, was designed and developed, in which children have to interact to successfully complete the game. The game is mainly targeted for the pre-scholar aged children and the goal is to associate animal images to the corresponding sound and word. It is based on a sequence of tasks in which the two players have to select the correct animal according to sounds, images and words. In these tasks, the players have the freedom to customize their own characters before going to the game area. At the end, players have a reward task: together they are allowed to feed a dog.

The key issue of WeCoOP is the promotion of collaborative work as it is designed for two players, playing in turns and the game goes to next level only after they have both played. The game enables to improve autistic children abilities to interact with others.

## Keywords

Autism Spectrum  
Disorders, video game  
technology, cooperative  
work

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## 1 · Introduction

Autism is a disorder of neural development that hampers social interaction and communication with others. They tend to isolate themselves from others and have a restricted and repetitive behavior [1].

Currently, there are several software and hardware that help autistic children deal with the disorder [2][3], which can probably be easily found in an appropriate institution, but only a few depend on the interaction between the child and another person. The idea is then to develop a game that provides that experience, where two children will have to play together to complete the game.

After choosing the theme of the project, some meetings with APPACDM- Braga (in Portuguese Associação Portuguesa de Pais e Amigos do Cidadão Deficiente Mental) were scheduled, to design the game.

The goal of this project is to promote the interaction between an autistic child and another person (preferably other autistic child). The playing action should always be accompanied by a responsible adult to examine the children interaction or help them in case they have any doubts.

In this paper it will be presented shortly the autism disorder and the way it affects children, some current adapted games/technology that can be found in the internet, like software/games available for download or equipment that can be found on appropriate institutions (Section 2); the project phases describing the software that had to be learned and the sequence of the tasks to completely program the game (Section 3); the description of the game itself (Section 4). Finally, there are presented some final comments, preliminary results and future work developments (Section 5).

## 2 · Video games and ASD (Autism Spectrum Disorder)

This section described some theoretical concepts regarding ASD as well as it presents examples of some video games for children with autism.

### 2.1 · ASD

Autism is a behavioral alteration which affects the ability to com-

municate with others, like establishing relationships and answering appropriately to the surrounding environment. Some children, despite being autistic, show great intelligence and talking skills.

Some of the main symptoms are [1]:

stereotyped and repetitive behavior/activities;

- unusual fears;
- learning resistance;
- laugh or cry without apparent reason;
- danger unconsciousness;
- physical contact rejection;
- isolation;
- resistance to changes;
- eye contact avoidance;
- disinterest in people/games.

Autism is mainly known for causing the isolation of a child or adult of their outside world focusing only on themselves. The majority of the children do not even speak, and when they do, it is pretty common to see echolalia (sound repetition). An autistic has an innate inability to establish affective relations and to answer environment stimulations. The autism spectrum can usually be detected once the child reaches two or three years old [4][5].

As the communication is one of the most difficult factors in autism, there are communication related supporting systems. These systems refer to any communication made with something more than the human body, like a pen, a computer, PECs (Picture Exchange Communication System) [6]. These technologies become a valuable help in school context.

Another technology being used nowadays is the robots. They react predictably, so that the child learns more effectively the type of reaction they are going to get by doing the tasks the robots ask them to do [7] [8].

When dealing with software, some children may have some difficulties interacting with the mouse/keyboard. To help in that interaction there are some other hardware that ease up that interaction. For example, Anditec and MagicKey, two enterprises that deal with this kind of hardware and software, have some solutions like a software that uses a camera to recognize the area of the screen the user is looking at (MagicEye) (Fig. 2), a big rounded one button mouse (Fig. 1) for children that do not have the precision to



**F1.** Adapted Mouse buttons [3]

**F2.** MagicEye: Eye recognition software/hardware [2]



**F3.** Touchscreen with virtual keyboard [3]

click a normal mouse, a touch keyboard with different sizes of the letters and a touch screen (Fig. 3) [2] [3].

## 2.2 · Video Games for children with ASD

Next, some of the games that exist and are related to autism are presented.

“Grouping with Sketchy” [9]

**F4.** Screenshot of the game “Grouping with Sketchy”

In this game, the player must pick up the toy the computer asks him to, and put it in the correct box.



**F5.** Screenshot of the game “Florence the Frog”.

In this game, the player hears the next direction he must move the frog to reach the goal. He/she must press the key.

“Florence the Frog” [9]



**F6.** Screenshot of the game “Ron gets Dressed”

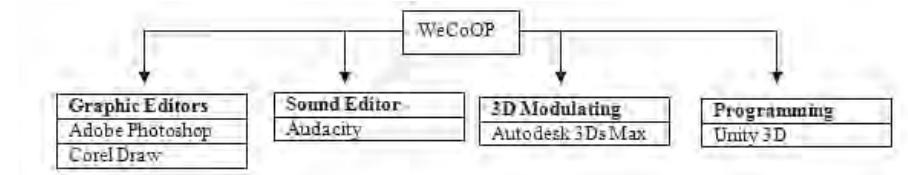
In this game (Fig. 6), it is described what the player must wear according to the weather outside. After that, he/she must dress the character just like he heard in that description.

“Ron gets Dressed” [9]



## 3. WeCoOP development

In the development of this game some software were used: image and sound editors, 3D modulating software and the programming tool (Fig 7).



### 3.1 · Graphic Editors

Adobe Photoshop is a bidimensional raster graphics editor developed and published by Adobe Systems, being one of the most used software for professional editing. In this game, Adobe Photoshop was used to remove backgrounds from some images, create objects and texts [10].

Corel Draw is a bidimensional vector graphics editor developed and marketed by Corel Corporation. In this game, Corel Draw was mainly used to vectorize graphics [11].

### 3.2 · Sound Editors

Audacity is a free digital audio editor and recording application. It is really powerful despite the size. In this game, Audacity was used to edit/cut animal sounds, just as their names [12].

#### 3.3 3D Modulating

Autodesk 3Ds Max, formerly known as 3D Studio Max, is 3D computer graphics software for making 3D animations, models, and images. It was developed and produced by Autodesk Media and Entertainment. In this game, 3ds Max was used to create the characters that the players will be able to customize at the beginning of the game [13].

### 3.4 · Programming

Unity 3D is an integrated authoring tool for creating 3D video games or other interactive content. Runs on Mac and Windows and the games it produces can be run on a browser, Windows,

**F7.** Scheme from software used in WeCoOP

Mac, Xbox 360, PlayStation 3, Wii, iPad, iPhone, Android and coming to Linux [14].

Some characteristics are:

- Javascript or C# script coding;
- Import 3D and 2D objects directly to the desktop (ex: .max, .blend files);
- 1st/3rd person already coded controllers;
- Intuitive interface;
- Incorporated script editor (MonoDevelop);
- Build applications to several platforms.

#### 4 · WeCoOP - the game

To start getting ideas for the game, we had some meetings with APPACDM to have the feedback from someone that experienced in the field. At those meetings it was defined that the game would be concerned to linking graphics, sound and words. As the theme should be about something the children could relate to, it was decided that the zoo animals would be an appropriate theme. At the beginning we picked the barnyard animals but that would substantially limit the database for the diversity of the game. It was defined the interaction that the players would have with the game. They must select the animals that they are asked in the form of words, graphics or sounds (name or onomatopoeia).

When learning how to interact with Unity [15] [16], we thought of creating a mini town at the beginning of the game, where the players would be taken to game area by clicking on a button. That movement action became the first and most difficult camera script, because we needed to figure out the function and the equation of the movement we wanted for the effect.

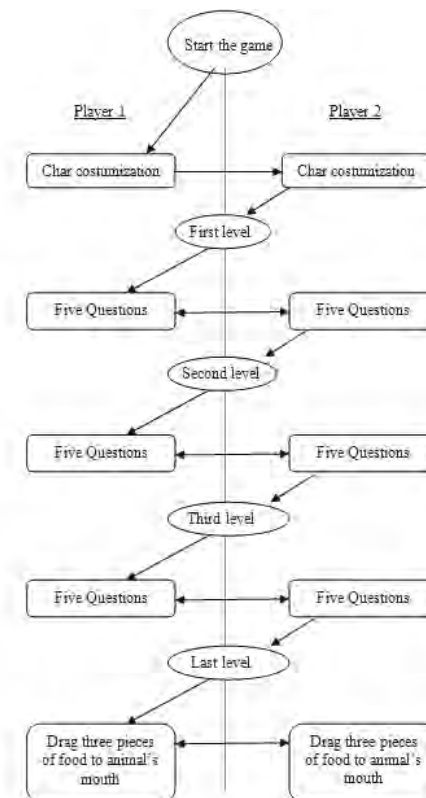
In this first version of the game there are available ten animals. At each run, five of them are randomly selected and are used throughout all that run. The selected animals were chosen based on their onomatopoeias, to make the recognition of the sound easier for the players. The animals considered in this version are dog, cat, sheep, pig, duck, cow, horse, elephant, chicken and monkey. In order to have another interaction with the game we thought of adding a final level where the players could drag an item to a location to complete a task, seeing that as a reward too. So, we put a dog at the center of the screen and each player must drag a

piece of food to the mouth of the dog to make it happier and fatter. Each player will have three portions of food to feed the dog. At the end of the level, the dog will jump with a smile on its face with the information that the players completed the game.

#### 4. · WeCoOP guide flowchart

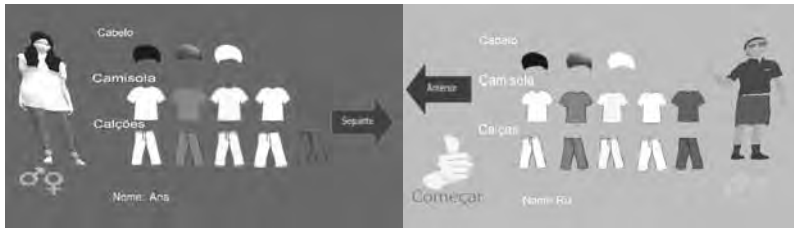
At the beginning of the game, both players may customize their characters clothes and hair. After that, the players are guided to the first level area where they have to answer five questions each one, alternately. Both second and third levels work as the first level. At the last level, the players will have to drag three pieces of food to a dog's mouth and then complete the game (Fig. 8).

##### 4.2 · Character customization



**F8.** WeCoOP guide flowchart (<->This arrow indicates that the answers are given interchangeably by the players)

The first screen of the game allows the players to customize the characters that will represent them in the game. The customizable items are shirt, trousers/shorts, hair, name (Fig. 9). This is only available at the beginning of the game. When the players are ready they should press the “Começar” button.



**F9.** WeCoOP screen-shot: customization screens

Next they should click the “Zoo” button and the camera will guide the players to the area where the actual game will take place (Fig. 10).



**F10.** WeCoOP screen-shot: click the word “Zoo” to advance

Before each level, the rules will be displayed properly. During the game it will always be shown three numbers. They represent the level, the actual question and the player that is supposed to be playing that turn (ex: 3-2-2).

### 4.3 · WecoOP Levels

In this game there are four levels. The first three will require the players to select the animal that the computer asks them to. The way that the computer asks the selection of the animals will change between images, sounds and words depending on the level. The last level will require the players to drag three pieces of food to a dog’s mouth.

#### 4.3.1 · First level

Alternately, the players have to click the animal that is equal to the one on the black square on the right top of the screen. The animal positions will then change randomly. When the first player answers correctly he/she will hear the name of the animal. When the second player answers correctly he/she will hear the onomatopoeia of the animal (Fig. 11).



**F11.** WeCoOP screen-shot: First level

#### 4.3.2 · Second level

This level happens just as the first one. The difference is that the animal to choose will be asked by hearing its name. Another difference is that the animals to choose will be alternately changed between animated and real pictures of the animals. If a player does not hear the name of the animal, there is a button on the top left of the screen that will repeat the sound if pressed (Fig. 12).



**F12.** WeCoOP screen-shot: Second level

#### 4.3.3 · Third level

The third level has all the animated and real pictures on the screen. By hearing the onomatopoeias and seeing the name of the animal (word is shown) the players will have to select the appropriate animal until there is no animal shown on the screen



**F13.** WeCoOP  
screenshot: Third level

#### 4.3.4 Last level

Alternately, each player will have to move a piece of food to the dog's mouth. The dog will get fatter each time he receives food. After three moves of each player the game will end (Fig. 14).



### 5 • Final Comments and Future Work

WeCoOP has as main goal to promote the interaction and cooperation between two autistic children. There may be several ways to achieve that goal, but we decided to accomplish that with a two player's game to keep the interest of the children in the tasks.

This game was first tested at APAC in Barcelos, Portugal. First, it was tested without an age limit and the results became a little unsatisfactory, because the theme was easy for the children and the severity of the autism was really low with almost no symptoms. It was then tested with younger and autistic severe children. The first visible thing was the interaction between the players, being one of them the therapist. Some children could not even talk and avoided eye contact and showed interested in the game evolution. The tasks were easy but really enjoyable for them so, we received some suggestions for a subsequent version, to add difficulties to the levels so that they could adapt to the player. Some therapists even said that, based on the game evolution, it could be used on other children with pre-scholar ages with other disorders.

Based on the preliminary results, this game reached its goals as a first version. For a next version we intend to:

- add more animals to the database;
- insert more types of interaction with the game with other themes;
- control the time of the answers;
- add web-services to help the institutions control their children's evolution in an easier way;
- do versions with other languages.

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## WORLD OF MOVEMENT

A Narrative Study of Moving Images for Videogames



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### Abstract

One of the main goals for a videogame to achieve is the players to get immersed in the game activity. During this state of the mind, a reader, or player finds and builds a particular narrative sense of the world through the game experience. But this sense can be quite complex to convey since it involves moving images, sounds, music, video, as well as social and ideological construction of meaning; therefore, it demands an approach that can help link not only the elements shown on screen, but also the cultural environment that puts the players' system of beliefs in action while engaging in any game. Narrative theories applied to visual media open a way to explore narrative systems that involve several kinds of audiovisual languages as cultural and expressive products that are meaningful for players. The videogame can't be considered a pure media; on the contrary, as well as the cinema, the videogame is a synthesis of several pre-existing media. It involves technical principles and aesthetic languages that are taken from photography, commercial arts, sculpture, 3D modeling, audio, music, and even other synthetic art fields such as theatre. All these elements are integrated into a coherent system that offers a world in which the players find sense in staying for hours and even days. Among the audiovisual elements used in videogame aesthetic proposals, animation sequences are one of the most attractive images for players since they are a powerful narrative support for generating the story's space, time, plot, and atmosphere.

### Keywords

videogames, animation, narrative, visual languages, graphics.

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## 1 · Introduction

Gaming has been a quite relevant activity during the past decades and videogames have become one of the most important entertainment industries in contemporary media. Because of the richness of its audiovisual elements, this kind of game activity offers the player not only a game algorithm but also a narrative experience supported mainly by moving images. Though the technology applied to this kind of media has had an astonishing development, the visual images offered by videogames have come closer to the languages formerly used by cinema.

The moving image allows the mind to connect sequences, thus creating a graphic representation of a “before” and “after”. However these moments, as instants, are not necessarily bonded by themselves, and require a particular kind of thought to put them together in order to the data to have any sense. When we look at a static image, like a painting for instance, we usually assume that what it’s showing came from a previous sequence of events and that something else will occur afterwards; if we get several static images (a, b, c,...), a connection must be generated so that those images can become a sequence. However, when it comes to audiovisual media, narrative is not compounded by a single sequence of events; even more, since several different elements are present in these productions (audio and visual images at the very least), we must consider the existence of sequences of instants inherent to each regime of representation. Though these sequences are put together by different languages (A, B, C...), they convey in a single complex production with a sense of coherence. Thus, the more languages present in an audiovisual production the harder it is to create an integrated narrative proposal.

In the mid-seventies, online videogames (Multi-User Dungeons mostly) were text based and relied on traditional literature narrative to enable the readers to understand the games’ fiction mechanisms, the same way that animation relied on the cinematographic ones. Nowadays videogames support themselves as narrative systems involving not only text or eight bit graphics but quite complex three dimensional modeled environments, objects and characters, as well as layouts for infographics and data visualization. Audio and music are also key elements, and of course, animation sequences. It is evident that preceding techniques to

create and to represent narrative provide the players with the necessary “reading” abilities to understand the videogame and to make sense of the fictional experience it provides.

It can be said that videogames such as World of Warcraft or Final Fantasy XIII, convey a very strong fictional experience not only through the gameplay but also because of the presence of moving images that create the worlds and characters for these fantasy stories as well as the plot. Even more, animation sequences are frequently used as part of the advertising campaigns for videogames just as it is done with trailers for movies. Therefore, animated images should be studied as a particular language sequence that plays an essential role in the videogame, but still keeping in mind what these moving images owe to previous narrative systems. The following paper has been divided into three parts for the analysis exposition to be clearer. The first consists of an explanation of the relationship between movement and the means to represent it; the second part deals with animation as a key component narrative in a complex digital media as the videogame. Finally the third part explores sense as a game phenomenon supported by the audiovisual elements.

### 1.1 · Movement as visual language

When it comes to moving images we usually think about cinema as the most common place for examples. However, movement represented by visual images is not a late nineteenth century concern but it goes a long way back in human history; for instance, the Chauvet cave (France) has its walls covered with hundreds of animal paintings heading towards one side or another indicating direction, thus showing human awareness of graphic movement since the ice age [1]. Though these paintings are static, the underlying intention is to show instants in chains of events; thus revealing the presence of memory capable of ordering everyday life instants in a quite elemental narrative sequence.

Memory that can apprehend the concepts of “before” and “after” prevented human beings from living in a constant present tense which responses were rather instinctive than based on a significant cognitive reconstruction of past events. The philosopher Henri Bergson considered memory to involve two different yet complementary kinds of movements.



“Memory, laden with the whole of the past, responds to the appeal of the present state by two simultaneous movements, one of translation, by which it moves in its entirety to meet experience, thus contracting more or less, though without dividing, with a view to action; the other is rotation upon itself, by which it turns toward the situation of the moment, presenting to it that side of itself which may prove to be the most useful.”[2]

As it is evident, this memory not only implied the past tense but also it enabled persons to fancy about the things to come, therefore creating time as a phenomenon of human perception and cognition; hence demanding graphic images to represent both moving things of the real world as well as visual marks to measure time accordingly to each human group’s priorities.

As language evolved, thought became complex enough to transcend time awareness and the basic need to name the immediate things of the daily life. Since language operates based on the absence of the things to which it is referring, it allowed to represent not only things that people came in contact with but also to create another reality based on the expectations and desires these persons had. People were then able to imagine other kind of life away from nature’s dangers and vicissitudes; but even more important, this fictional construct open the possibility to order the human cosmos through narratives (myths, for instance).

Narrative as a particular kind of thought offers answers to questions about the origins of cultures and social practices. Therefore, the past is no longer just an instant in a chain of things that occur somewhere in a timeline; the past becomes narrated, namely, it acquires a specific meaning that helps to make sense of the present. It also gives a sense of direction for the idea of what kind of future is to be expected. Consequently narrative can be considered a representation of a meaningful order of events connected through time, and that not only finds its crucible in words (spoken or written) but also in graphic images.

Though the images have been considered during some periods of Western history to be the literature of the illiterate [3], they convey their meaning not only by being linked with each other but by keeping an intimate relationship with the languages based on words. Even more, images can only be consider a language provided that they can build systems founded in complex seman-

tic relations; a single image can be interpreted by an observer, however its meaning could be altered if this image is somehow connected either with other images or even a text. “The images do not have a substantial meaning, only a relational one.”[4], the same as words though these last might seem otherwise since their particular meaning can be enunciated as dictionary definitions do. However, words suffer the same condition as images: the underlying deep sense they try to convey can only be reached by reading the whole chain of signifiers. And a complete chain of signifiers might involve sequences inherent to several different languages (text, graphic image, music, etc.) as it happens with cinematographic productions.

As we can see it is not that images are some kind of inferior narrative language; instead we must consider that they demand a very own way of reading, different but not less complex than the one of written literature. Contrary to the common belief that watching a narrative on screen doesn’t require either the effort or the cognitive competences that reading literature does, audiovisual narrative could be quite demanding when it comes to the comprehension of several languages that are not presented separately but rather as a synthesis, hence offering a brand new language of its own. Consequently a new language indicates a particular way of thinking and representing the world; though moving images have been part of graphic narrative through history, it was not until the nineteenth century that technology allowed images to transcend their condition of “as if they were moving” and became an actual perceptual phenomenon of movement.

The development of languages usually goes along with the technical and development to produce, store and broadcast the productions. However, languages should not be mistaken with the medium they are transmitted; for instance television as medium can show the spectator productions based on different audiovisual languages, for instance an anime, a soap opera and music videos. Therefore different complexities of audiovisual languages can be watched in the same kind of media, the same as different media use the same language for different kind of productions. Videogames getting closer to movies give an example of this, especially when it comes to productions as Square Enix’s Final Fantasy XIII (2010) which extremely realistic graphics and animated sequenc-

es surpass the game's algorithm making FFXIII more an interactive movie than a tactic RPG.

Despite the fact that technological advances have had a significant impact in the way stories are conceived and told, the examples offered by the videogame industry don't show a very profound break through when it comes to the essence of the narrative proposals. "[...] what counts for us as a medium is a category that truly makes a difference about what stories can be evoked or told, how they are presented, why they are communicated, and how they are experienced." [5] When Marie Laure-Ryan enounces the importance of the medium for telling stories, she expects that new media will bring new languages and new means of representation along, consequently, implying the presence of new ways of ordering the human cosmos and giving meaning to it through narrative thought. We must be aware that changes in the perceptual expression of narrative representation not necessarily mean there's a change in its cultural and ideological content; furthermore that stories told by new digital media are not essentially different in their basis from the ones of literature and even myths. However this doesn't mean that new media don't imply new reading abilities to be learned by the audiences in order to get immersed in the narrative system and to make sense out of it.

## 1.2 · Animation and world creation

Language as a symbolic system allows people to create realities that may not have many objective connections with the actual world in which they live. These realities of the language are not only built by human thought but they act as builders of thought as well; hence most of what we called our perception of the world will be tainted by these language mechanisms. Since these constructs are not empirically proven, they show a high degree of fiction despite the fact they have real consequences in people's behavior. It can be said that fiction is one of the main forces that cause culture to be generated and to be learned through time and generations.

Narrative systems are cultural fictions made flesh, and as such they offer different kinds of images to the audience's senses. Even though a cultural fiction may seem to be applicable to all levels of a specific culture, and even more to any culture what so

ever, graphic representations of narrative tend to operate only in limited fields of perception and consumption. A culture is made of several different social groups that though they share the same essential fictions, they express them in very different languages and make them known through diverse media. Then it doesn't strike us as odd that many social conflicts around audiovisual productions are bounded more to the graphic expression than to the essence of the narrative implied.

According to Paul Cobley, one of the main issues on narrative expression is the difference created not by "what" is being told but by the "how".

*"Memory embodied in narrative made a significant contribution to the formation and maintenance of self-image of peoples, especially when writing was not available physically to store records of past events and details of a people's most cherished ideals. [...] narrative does not reveal universality; rather it has been instrumental in the promotion of difference."* [6]

This how a story can be told is not only a vehicle of difference but also a mechanism to create identity and the sense of belonging. Different expressions of the same story can make this evident; for instance, there are readers for the Lord of the Rings novel, spectators for the movies and players for the MMORPG, that are appealed by different graphic representations but that can dig the meaning of the narrative through different systems. Even socially speaking the access and consumption of any medium has different attributes for those who engage in their narrative system; being a reader is considered a positive thing while being a gamer not that much.

Animation is a particular way of representing a narrative based on moving images, but these images are not taken directly from the world of objects. Unlike photographs, drawings are not the most iconic of images; thus an animated drawing copes with the challenge of representing a world that won't look like or even move like the world. Even more, this kind of moving images must create a language of their own that can be understood by the persons who are supposed to watch the production; that's a reason why the use cinematographic languages is a common place to deal

with graphic representation issues.

In fantasy videogames quests are a fundamental part of the game algorithm. In order to make any sense, quests rely on a narrative system to give them a purpose: to get from A to C you must first get B, otherwise you can't complete C. For instance, if you want to go up to the next level you must defeat a powerful enemy with a weapon that can only be obtained by going on a quest, solving puzzles and rescuing other characters. This is a general scheme for adventure themes; however the expression of this content creates different narrative experiences. Though titles like *World of Warcraft: Cataclysm* and the *Uncharted* series (Naughty Dog, 2007) share the same adventure scheme, the narrative expression shows two extremely different worlds in which the action takes place; in the fantasy setting players must defeat a powerful dragon, Deathwing the Destroyer, while in the action-adventure proposal the enemy is a human treasure hunter. Even though the game's algorithms are pretty much the same in abstract terms, in the graphic dimension both tell quite different stories, thus appealing to different kind of players whose expectations concerning the game experience might convey in the abstract relations that both games offer while being totally separated in visual terms. Animation in videogames is a powerful element to establish the main narrative elements of the game system. This audiovisual chain of signifiers shows the setting as well as the inciting incident and conflict for the story; it might also introduce the main characters or show the player a set of character archetypes from which he or she can create a new one. These animated introductions help to convey a sense of a pre-existing world, in other words, they create a past that provides sense for the time (present) in which the game play will start. This audiovisual sequences offer an explanation for the current circumstances of the plot's conflict, it sets the origins of that cosmos pretty much as a foundational myth.

As we can see, the underlying fictional sense of a narrative system can be reached not only by solving the algorithm but also by watching the animated sequences. Both game and animation are, on their own, complex synthesis of several regimes of languages making these productions hard to read. Though previous media have given the audience tools to access these narrative systems, the fictional sense and meaning are still hard grasp. "Meaning, if

you like, is scattered or dispersed along the whole chain of signifiers: it cannot be easily nailed down, it is never fully present in any one sign alone, but is rather a kind of constant flickering of presence and absence together." [7] Of course it's evident that videogames offer different levels of complexity to be read, the same as novels did; you can play a game on the surface and enjoy it. Nonetheless when it comes to creating concepts and designs for videogames, developers should take into account the complexity of this medium, as well as the narrative features that elements such as animation offer the game experience.

Animation sequences are present along the whole structure of games, mainly to emphasize the main narrative instants of the plot: introduction, inciting incidents, some raising actions, climax and resolution, as well as important achievements accomplished during the quests. *God of War* (SCE Santa Monica Studio, 2005) uses animated sequences to create the atmosphere for combats and also to develop specific moments of the main plot; these animations provide important narrative information to the player, particularly when it comes to the dialog among characters. Even though animated graphics play a quite important role in the game experience, it's necessary to be aware that the moving image is just one element in the complex audiovisual production videogames are. For instance, audio is another element capable of enabling the space diegesis as well as an important information channel for players; audio can be considered one of the most immersive elements of audiovisual production since it is the only element that can actually surround the player.

As it's been explained so far, meaning and sense in audiovisual productions are not linked to any particular element of the narrative system. A player can engage in several game sessions and get immersed by different elements in each game experience. The same as it happened with written literature, a narrative system doesn't remain the same as it can be changed by the player's expectations as well as by new information and different ways to make sense of the game. Therefore it can be said that graphic images share with written words the characteristic of having relational meanings bounded not only to other language elements but also to the moods of their readers or players.

### 1.3 · About sense and narrative games

Narrative systems offer a way of dealing with the complexity of the world, from the more abstract metaphysical issues to the everyday life. Since ancient times, people have told stories in order to find some profound sense to give direction to their very existence. As sense presents itself as one of the most transcendental goals to achieve through narrative, it's suitable to give a definition to know what is to be understood while applying this term to games and narrative.

Following Gilles Deleuze's thought sense [8] is not a thing but an event, something that happens when a spectator is able to connect in a way that is coherent for him or her, several images that might be of a different nature. Sense is something that happens to the individual and even though it is only temporary it's also quite powerful; that's why a phenomenon like sense, mainly in philosophical views, can have a deep impact in a person's actions, behavior and in the way he or she deals with the visual representations that any media has to offer.

During play, the human mind is immersed in a very particular kind of thought. According to Gregory Bateson [9], the mind allows itself to experience new things and finds new ways to connect different kinds of images; the ludic experience can help the sense to be experienced by the player. This event can also lead to the construction of new schemes of thought due to the fact that the connections of images he or she made were meaningful enough not only to obtain something new but also strong enough to destroy pre-existing thought structures. In many ways, it can be said that when it comes to thought processes destroying might be way harder than building; in Deleuze's perspective, thought should be moved in order to let new thought-images emerge.

These movements of thought find a crucible in the visual images. When an image is presented, the spectator stands before another person's thought movement and starts a dialog in which he or she connects that image with the images stored as memories, fantasies or expectations. The spectator is actually creating a new image from the one the author or director is offering; thus, the image keeps moving, being created and re-created with each contact with the individual, allowing new experiences of sense to emerge each time. Thus, the image is never static and it keeps on

moving and changing, just as it happens with every time we read the same book over again: it's never the same book.

In any narrative experience, sense is a quite important goal, but the main impulse towards it comes from the anxiety and uneasiness caused by its twin brother: the nonsense. Nonsense is also a quite complex event that comes with a particular feeling that something is incomplete; as it was said before, there are no complete images or texts, and those blanks that cause the sensation of being empty seek a way to be filled in, namely, they are looking for the missing pieces in order "to make sense". So, those parts of the games that demand to be completed are exactly the ones that set the algorithm of the game in motion; you must play the game, solve the puzzles or win the quests so that the sense can appear. And narrative elements such as animatics give the game an introduction to show the paradigm from which the player can choose items for filling in the blanks. Not all movements of the thought are powerful enough to break an already pre-existing thought scheme; and not all movement necessarily implies the appearance of sense either. Accordingly, it can be said that even when the narrative experience is an excellent "thought incentive", it can't make the event of sense an unavoidable fact, or force the thought schemes to move and change.

As we've seen so far, the blanks within an incomplete image must be filled in by the players. But, how does this happen? Where do the "right images" to fill in the blanks come from? Even though we are working with a technically innovative media, the scheme of thought that allows certain choices to appear and prevents others to even be imagined, doesn't come from a technological matrix but from a cultural one that involves beliefs, moral sense and, of course, a net of shared meanings for most visual representations. Thus the role of animated sequences is to set the narrative possibilities for the player to choose during the game play; for instance, in fantasy games, if the animation shows the kingdom's princes being kidnapped the game algorithm must imply the rescue actions. They also support the plot by showing the player "what happens next", after a foe is defeated or when a quest is completed; the animated sequences enhance the game experience by making the narrative proposal more vivid. In WoW Cataclysm the animated opening introduces not only a setting but

also the main foe and the conflict; it gives direction to the plot and tells the player the game's essential goal: to save the realm by killing the evil dragon.

One of the most appealing aspects of playing videogames, particularly MMORPGs, is the possibility of escaping everyday reality for a while. Even in advertising campaigns, the promise of "doing and being anything you wish" is quite a seductive element to entice sales. However we must be aware that this "anything you wish", is created from what we expect from the real world situations we experience; this expectation, this "I wish", can work as a blank that needs to be filled in, and the videogames, the same as the movies or literature, can help us find this sense for our existence. For instance, this can be observed when we learn something about how ourselves, or how people might feel during times of war by reading a novel like Reverte's *The adventures of Alatriste* or by playing a MMORPG like *World War II Battle Ground Europe* (Concerned Rat Software & Playnet In, 2001).

In the character dimension, the forces of the cultural systems of beliefs can be quite evident, especially when the players are offered the chance to decide how their character will look like. As we can see in games such as *EverQuest* (Sony Online Entertainment, 1999) or *WoW*, the images of young and athletic heroes are quite frequent and visual characteristics tend to favor western traits over alternative aesthetic models. It's also not very usual to find characters whose image represent old or fat people. Even the way players treat each other can be influenced by the visual representation of a character, for instance, female characters tend to suffer from harassment while engaging in the game activity.

As we can see, narrative is mainly a representation of a cultural system of beliefs, and media are not an exception, seen from a narrative perspective. Even those new media such as the online videogames have shown to repeat the thought schemes that are in force in a cultural context, with both their virtues and pre-conceptions. The abilities to read and understand this kind of audiovisual narratives are taken from pre-existing media such as cinema, not only when it comes to graphic expression but also in the cultural fiction underlying the narrative systems. Therefore we arrive to this paradoxical conclusion: the videogame offers a narrative experience which makes sense to the player not because

of what's new in it, but because it tells the player something he or she already believes in. Thus raising new questions on whether these new media elements, like animation, could actually open the chance for new ways of thinking and narrating the world, or are they just nice technical surprises to create astonishing visual graphics.

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# SCROLLING ARCHITECTURE

Relationships between the platformers produced in beginning of the 90s and Architecture



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## Abstract

Any gamer easily understands the direct relationship between the real architecture and its representation in computer games' scenarios. However, the relationships between the 90's platformers and architecture goes beyond that, being also perceptible in their creative and constructive processes, in the relation between space and time as well as in the adoption of graphical projections in the levels design that are usually used in architectural project.

If real architecture aims to be an interface that allows human adaptation to nature, the architecture represented in platform computer games, even having similarities to the real architecture, it aims to be an efficient obstacle to avoid the gamers to command the main character to reach his/her goal.

With regard to architectural representation in games, it becomes pertinent to understand how architecture is represented in computer screen two-dimensionality, emphasizing the possible influences that other popular mass media may had in their representation methodology.

In addition to shape and image, computer games also simulate materiality and its density through modules that were programmed and drawn to be applied successively to build the whole scenario.

Due to the big quantity of platformers produced in the beginning of this decade which could serve as examples by the similarities among them, this paper aims to study the multiple relations between the platformers produced in early 90's and architecture focusing only in the game "Titus the fox" by Titus Interactive.

## Keywords

Multidirectional scrolling,  
Platformers, human  
senses.

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## 1 • Introduction

The importance of game development for architectural project and vice-versa has been frequently discussed in international academic conferences. From these conferences dedicated to this theme, were published two books that compile some scientific articles and that are characterized by their interdisciplinarity. In this article are developed points of view that were mainly based in these books, being useful to understand their contents.

The first compilation published in 2006 by Oosterhuis and Feireiss [1] is divided in three topics (Play, Geometry++ and Open Source) and assumes architecture as a multiplayer game due to the great quantity of professionals and subjects that are involved in its conception. Actually, this book is more focused in studying the possibility of using digital technology that can also be used in computer games in architectural project. On the other hand, the compilation published one year later by Borries, Walz, and Bottger [2], highlights also what a game designer can take from architecture as well as the mobility and versatility of the supports where games can be played nowadays. It classifies the new space typologies resulted from the superposition physical and virtual like Giedion, in the 40's, did with modern architecture organizing its topics in their social and chronological context.

The importance of studying nostalgic games in this article is justified by its easy accessibility, once everyone easily finds a free emulator and old games in the internet to install. By their small size, they are also relatively fast to download and occupy a smaller size on disk, comparing with a new game.

Such advantages may mean that some players would prefer to play it, becoming truly pertinent to study them, once we do not have control of their real influence and diffusion.

However, the reason for choosing platform genre to explore the relationship between computer games and architecture is explained by the direct interaction between the architectural scenario and the main character in platformers being similar to the relation between the real architecture and its users.

As architecture is the art of shaping the empty through the material, the architectural scenarios acquire a great importance in platform computer games, once they are also composed by fills and empties and it is in the last ones where the characters moves.

According to Meiss [3], the architecture, even being a mainly visual experience, it is also kinaesthetic, once it uses the sense of movement of the parts of the body. When built, passes from being only image from drawings to be “the scene and sometimes the scenario of comings and goings, of gestures, even of a succession of sensations”. [3]

The represented architecture in computer games aims to be this scenario, simulating the same succession of sensations through the computer screen and sound.

According to Vorderer and Bryant [4], video game players are allowed more and more, to involve a bigger number and degree of senses while playing due to games development. When the user gradually becomes sensitive to the video-game stimuli and the real stimuli become blocked, the game is described as “immersive”.

As the resources to stimulate the user senses used by 90's platformers were smaller than nowadays, these games scarcely become immersive. However as these games use majorly the visual sense in a symbolic way to simulate other senses, this study aims also to understand if these games allows the users to under-rate other senses in real life and in architecture. Some of these visual elements in the 90's platformers were inserted in the scenario. However the scenario also has other functions. Similarly to comics where the scenarios are used to camouflage a common structure [5], the scenarios in platformers also serve to give to the player a different experience relatively to other games and levels. By this point of view, the game choice is not justified by its difficulty or level structure, but by specifying real references of what it aims to represent virtually. In other words, as the title explains that the game consists in a travel from “Marrakesh and back” it becomes easier to understand if the authors wants to make the player to feel an experience that is similar to the real one and what kind of instruments are used to simulate or not this experience.

To understand the tools and strategies used in platformers and architecture, we will firstly study the plot and concept that originates both and then how they interact with human senses, using as a study case the game “Titus the Fox”.

## 2 · Origins: Plot and Concept

The plot in platform games establishes a goal that justifies the gamer to play the same one. In architecture, we can compare the plot to the moment when the client exposes to the architect the reasons that brings him to the atelier. Architects only project buildings if they have a client or a potential client. After this main motivation, the next one is architectural concept that is explored using as clues the implantation, the aimed program, the architect architectural inquietudes, architectural influences, previous works,...

The concept in computer games arises before the plot and, according to Adams [6] can be inspired in some entertainment media as books, movies, television.

It is basically composed by a group of features observed in other games and media that defines what the authors want to reproduce or not in their game.

The study case presented in this paper is an international version, published in 1992, of the French game produced by Titus Interactive in 1991, called “Les Aventures de Moktar”. The game scenario was inspired in a videoclip by an artist who was not very popular outside France named Vincent Lagaf and, as the gamers would not understand this similarity, they decided to replace the main character to the firm mascot.

The main character, the Arabian man named Lagaf, was replaced by a Fox. [7]

Those who do not know about the first version may conclude that the game was made through an animalistic point of view, which interprets the city as an interface that adapts Man to nature but forgets the animal welfare. Thus, the cities, by their scale, can be a real obstacle to animal life.

However, this interpretation is not in the origin of the game. This proves how localization in games may add new meanings and the chance of taking wrong interpretations by the gamers.

To guarantee the game success, the localization process obligates also an adaptation to numerous cultural factors, instead of translating only the texts and audio [8].

The study case not only changed the main character, the title and the text language, but also the characterization of some black delinquents characters to avoid racist comments and it was elimi-

nated the last level from the sequence.

## 3 · Interaction with human senses

According to Deplazes [9], in Architecture “the line and the two dimensional area do not exist – they are mathematical abstractions”.

For moments we can consider the represented scenarios in games as mathematical abstractions, once even trying to simulate depth, they simulate three dimensionality through the two dimensional screen. However, they are more than simple images: scenarios are programed to have density and materiality (that are associated with the tactile sense).

The platforms, which organize the free space, consist in slabs which avoid the characters from a continuous fall caused by gravity force, which is also simulated in games, as well as the walls that avoid the characters to walk in a certain way. This represents the role that tactility occupies in real architecture described by Meiss [3] as inevitable by the gravity and by the visual aspect that anticipates it.

The space deepness and shadows in representations may also contribute to visually understand material properties and volumes. As Le Corbusier [10] concludes, “our eyes are made to view volumes under the light; the shadows and the lights reveal the shapes.”

Relatively to “Titus the Fox”, as the scenarios are not represented in perspective, the space deepness is simulated only by the objects decreasing, by the use of shadows and by the darkening of distant elements and plans.

Consequently, in the level 9 it is represented in the walls, Egyptian paintings which are characterized by its two-dimensionality that makes us to conclude that, more than a confusion between the Egyptian and Moroccan art, it is the adequacy of the available tools to the represented themes.

As the scenarios are composed by square pattern modules, it becomes too complex to represent the scenarios in perspective, that usually uses acute and obtuse angles to give a sense of deepness.

In the study case, the scenario was drawn as a big architectural section that is usually called map. The pattern modules that com-



poses it were previously drawn and joined with others with the same characteristics to simulate textures, such as crossed brick joints, marbles chromatic heterogeneity, the starry sky, the spikes,...

This explanation has various intentions: to show that the game levels and architecture are thought as a whole, however it uses modules (that is, parts) to be concretized.

According to Holopainen and Björk [11], the application of patterns had its origin in architecture and they believe that working with design patterns, “opens up possibilities for experimenting with creating rules for architectural design similar to those of games”.

Le Corbusier [12] distinguishes architectural modules from regulating lines, once the first ones “measure and unify”, and the seconds “build and satisfy”. However in games the module also serves to regulate the architectural scenarios and synchronize them with characters movements that are regularized also by modules dimensions.

In “Titus the fox”, as well as in some platformers created in the beginning of 90s, it is also perceptible a comic heritage in the represented scenarios.

In this game, the scenario scrolls to give a sense that the main character is moving, however in a phased way. That is, when the main character approaches to the left or right limits of the screen in a determined phase of the full scenario, the scenario moves from left to right or vice-versa, respectively, to show other phase of the scenario.

According to Spuy [13], scrolling exists in 2D games “to allow a player to move about in an environment that is much bigger than the confines of a stage.”

Though, this movement designated by multidirectional scrolling, occurs abruptly in this game comparing with other ones that were published posteriorly by the same firm, such as “Prehistorik Man” (1995) or “The Blues Brothers 2: the jukebox adventure” (1993). In these examples, the scenario moves softly, following the characters movements, who rarely leave the same screen point. In this game, what distinguishes their scenarios from those of comics is that the last ones have blank spaces which, during the reading, are fulfilled by the reader/viewer imagination and the

comics’ format allows an immediate peripheral reading, due to the contiguous placement of the vignettes.

This abrupt scrolling used in “Titus the fox” is intelligently used to increase the game difficulty, revealing abruptly some traps and enemies who throw objects, that the player may not be prepared to react in time.

Sometimes, the scenarios are also responsible for the difficulty increase by pinching the main character through low ceilings, forcing him to walk on all fours. As it becomes impossible to move freely, an enemy programmed to get closer to the main character is enough to steal one life to the same one. In “Titus the Fox”, the pinch is a usual cause of death, as well as falling in spikes in the pavement/ceilings which causes the immediate death of one life.

The frequent causes are also intensified by the scenarios which simulate secret passages, with low ceilings which do not allow the character to make some movements like jumps. Normally, the scenarios from all levels are drawn as it was unidirectional mazes, except level 13, on which the action occurs in a multidirectional maze. The level becomes very difficult once, contrary to Pac-man game where the player has a total perception of the maze, in this case the screen only shows a small part of the same one, becoming impossible to predict if the options chosen by the player are fatal or correct.

Also, if we look to the beginning and end scenarios, we conclude that the level aims to represent a travel from the African Sahara to Europe, through sewer pipes. It is a strategy to avoid the representation of places where the main character would pass if he/she would do way in the surface.

By its mazy structure, it should give to the player a similar sensation of being lost in the Medina roads. However, as it is a two-dimensional platform game, this is represented in section, contrary to the urbanism of Marrakech old city, which has a mazy plan, composed by a confusion of winding roads that form acute angles among them.

Apart from this concern of passing a real experience to fiction, the represented scenarios are not limited to the architectural morphology, forgetting their appearance - they were clearly inspired in typical vertical monuments, as the Koutobia mesquite, the

Kashbahs as well as the represented materials (adobe, marble and walls that are typical from the city), infecting the representations with yellow tones, which were pleasantly highlighted by the blue, starry sky.

Relatively to all the represented architectural façades in the game, they should not be understood as a separation between the interior and the exterior once only few windows and doors, during all the game, gives access to spaces that represents the interior however, the same ones are no more than other parts of the same level map that are positioned to be imperceptible and inaccessible during the usual course.

There are other incoherencies in the represented doors and windows. As we can see in the image below, an exterior window gives access to an interior door, however to get out of the space by the same exterior window, the character needs to enter by a different interior door. Façade windows are not also represented in the correspondent interior space. As it is a representation of architecture and not architecture, the compromise that Venturi [14] refers in his treatise, that a complex and adjustment architecture should not abandon the set, is not accomplished. The interior is made as an independent part.



F1. Level 2 map.

Together with neighboring façades and the integration of transparent elements, Knaack [15] enumerates the building structure as a condition to draw façades. Façades are interfaces that serve to control exterior elements, such as rain, wind, sun light and security.

The main objective of interior space in architecture is to contribute for the human wellness and protection. In the study case, this idea is also reflected by the great quantity of extra health items that exist in interior spaces. However, space is not only characterized to its material and visual attributes, but also to its thermal and acoustic features and its users.



As thermal sensation in architecture is impossible to be felt by the player, it is essentially represented by the chromatic palette used in representations.

According to Luciano Guimarães [16], some colors are associated to certain temperatures, weights and movement. In “Titus the Fox”, to characterize the hot desert and the North African constructions, the use of yellow and red tones is very frequent. These two colors are known as warm colors, once it alludes to the sun and the fire, however the same ones are contrasted by cooling colors such as green and blue that is usually associated to the water and air [17]. This chromatic contrast serves to evidence the meanings.

F2, 3, 4. Screenshots taken from Titus the Fox, highlighting the main character position relatively to the screen and to the scenario.



With regards to acoustics, the player does not have the perception of space through sound, once the effects of reverberation and echo are replaced by Arabian melodies. Sound effects such as objects falling to the floor are not emitted, however are emitted artificial sounds when the main character throw objects or hit enemies with the same ones.

Concluding, the use of a melody reveals the interest of making the player to feel inserted in an Arabian environment instead of feeling in a certain interior/exterior space. Relatively to space users, they help to characterize space by the way they occupy it.

It is understood by usual inhabitants, those who are not the main character, once they interact spontaneously with architectural elements such as windows, parapets, etc... to hide and throw objects to prejudice the main character.

F5, 6, 7. Screenshots taken from Prehistoric Man, highlighting the main character position and the scenario movement, relatively to the screen.

## 4 • Conclusion

Having analyzed some instruments used by platformers and architecture, we may conclude that architectural representations are highly conditioned by some limitations from two-dimensional representation and the existing resources.

As Titus the Fox proves, some of these limitations can be intelligently exploited to increase the game difficulty and some sensations that are usually provided by architectural spaces such as heat, volume,... can be simulated by the limited resources of side-scrolling games, by using elements symbolism instead of fidelity to reality.

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# THE KROMOSOMER PROJECT



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## Abstract

This article is a reflection on the Kromosomer project, a storytelling performance held in the physical world and implemented through digital, virtual and social media. The motto was the traditional Norwegian legend characters that represent “the other”, the not “normal”. They were illustrated as avatars in the metaverse, where they were also distributed as unfinished artefacts, open to mutation.

We will describe and analyze the main work method used on this project, a shared creative process of collective and distributed creativity. We will also focus on how metaphors constitute themselves as paramount to our way of working.

## Keywords

storytelling, performance, legends, avatar, embodiment, shared creativity.

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## 1 · Introduction

Kromosomer was a traditional storytelling performance that interacted with digital, virtual and social media during its adaptation and implementation process<sup>1</sup>. In the realization of this project two visual artists, a social entrepreneur, graphic designer and filmmaker and a storyteller participated. The project had a “distributed” dramaturgy, where different participants contributed equally, but creatively independent. The Norwegian storyteller and initiator of this project Heidi Dahlsveen (aka Mimesis Monday) grew up with a grandfather who used storytelling, more specifically folk legends, as a way to deal with the daily life. It was as an adult that she realized that these stories were more than everyday anecdotes. Briefly, one can say that a folk legend is a short traditional narrative that has been told as a true event. The Kromosomer project was developed as an attempt to understand the disturbing concerning these stories.

In the project avatars were created based on characters from Norwegian folk legends; they formed the basis for new stories mainly mediated through pictures and they were distributed in Second Life free and with full permissions. This meant users could copy, transform and share them. In this way the avatars could be embodied in an open and creative form.

The users were encouraged to take pictures and machinimas, or to use the avatars in any other creative form. Some of those pictures were used on a blog<sup>2</sup> where readers were invited to create new stories. These stories were then passed on either in social media or verbally told in the performance. These producers’<sup>3</sup> interpretations were later assembled into a video that was projected on two walls during the physical performance. There were also installations with picture stories of the avatars created by producers. One of the stories in the performance was told simultaneously in world and in the physical world. The storyteller (Heidi Dahlsveen) was then using one of the avatars created for the project.

In this paper we will describe the background for this project, i.e. Norwegian legend characters and the way it was developed through virtual world, social media and physical performance. We will concentrate on two important aspects of this project’s implementation — a shared creative process and a metaphorical way of working.

1. A compilation social media dissemination can be seen at the Scoop.it page of Project: Kromosomer: <http://www.scoop.it/t/project-kromosomer>

2. <http://mimesismonday.com/?cat=360>

3. When a user contribute into the project we decide to call them producers, according to Axel Burns’ concept of produsage that we will address later on.

## 2 · Background

The background material for the project was collected from oral tradition, more specifically Norwegian folk legends. It was primarily natural mythic legends that formed the basis for this project, meaning an encounter with the supernatural, the unseen, the other<sup>4</sup>.

The folklorist Linda Dégh states that “legend contextualises and interprets belief” [1]. Belief is the core of the legend, and not only that – the science (knowledge) is a necessary counterweight when the legend occurs [1]. Folk legends are told spontaneously as people orient themselves within community norms: “It is common knowledge that the human being is, by nature, a homo religious, who by compulsion constructs personal variables of the established Church canon in which he or she had been indoctrinated by public education” [1]. The belief does not itself come forth as a narrative, but it lays behind the folk legend as a hidden reference, as a fear of the unknown, as a pattern, an explanatory model. The frame around the folk legend is the real life topology [1], “everyday life” is there prior to the folk legend and it is there afterwards. It is as if life stumbles along the way, discovers something and moves on. We must emphasize that what separates folk legends from other traditional stories is the radical encounter between two worlds. Folktales also portray the meetings with other worlds, but there they exist naturally next to each other. When a protagonist encounters a troll or other “unnatural” being it is as if they meet a neighbour. In folk legends you meet a character gallery of trolls, mermaids, sea serpents and so on, but also characters bearing a likeness to human beings like ghosts and huldre. In people’s stories about meeting with “the other” the folk legends pose social



F1. Heidi Dahlsveen performing at PopUp hub, in Oslo, 2012.

4. We use the term “the other” referring to an origin legend about how “non-humans, but similar to humans” were created. The story is related to The Fall (Adam and Eve), a legend you find in many European countries, explaining why some people are “different”. Shortly it tells about how Adam and Eve were kicked out of Garden of Eden. They got quite a lot of children and heard that God wanted to visit them. They were embarrassed by all these children, so they hid some of them away: in the basement, in holes in the soil, in caves

and under the bushes.

When God came, he asked if these children were all their children, they said yes and God said then: “Let those children who are hidden remain hidden but not forgotten”. So all the children hidden away remained hidden away, living their life like we live ours, but under our feet. They became the unseen people. Both in Norway and in Ireland (and maybe other places) there are still people who believe in these unseen people or the “other” people as they also might be called. We avoid using the term “fairy tale” because there is considerable disagreement about what it really is within the type of story today.

6. Changeling is a child who has been replaced by a child from the “huldre (fairy) people.

and existential questions. This meeting may be analogous to what occurs when you meet an avatar, as we shall see later.

It is useful to include Julia Kristeva’s concept of “abjection” here. The abject is located outside both subject and object, it is something else. The clearest description of abject, often used and collected from Kristeva, is the meeting with a dead body, a corpse. The corpse is similar to life, but it is not “life”. It reminds us of nothing but we find it offensive, we are disgusted, it makes us feel sick because of the comparison and alienation [2]. The logic, the meaning is broken down because we lose the distinction between subject and object, “I” and “the others”. Abject is the feeling of seeing an open dirty wound:

It is thus not lack of cleanliness or health that causes abjection but what disturbs identity, system, order. What does not respect borders, positions, rules. The in-between, the ambiguous, the composite. The traitor, the liar, the criminal with a good conscience, the shameless rapist, the killer who claims he is a savior. . . Any crime, because it draws attention to the fragility of the law, is abject, but premeditated crime, cunning murder, hypocritical revenge are even more so because they heighten the display of such fragility [2].

This may also relate to the concept of the “Uncanny Valley” developed by Masahiro Mori, when studying robot design — a sharp and sudden depression in a line chart describing growing familiarity caused by increased human likeness in a robot [3]. Basically, our sense of familiarity tends to increase when a robot appears more human until, suddenly, it drops to negative levels, when this human likeness becomes uncanny. For Freud the “uncanny” is “that class of the terrifying which leads back to something long known to us, once very familiar” [4].

Reinforcing Kristeva’s argument, Mori investigations also put the dead corpse at the bottom of the valley and even further down if this body would move, becoming the “zombie”, the animated dead corpse, the lowest peak in the chart. It seems that we are more terrified of what looks familiar but falls outside our explanatory models, than we are of the utterly fantastic.

In folk legends about the changeling<sup>6</sup> or “utburden”<sup>7</sup> our concept balances on the edge of meaning. The legends point to something terrible behind them: the killing of children and the ex-

perience of having children that are “not normal”. It’s disturbing because we understand and do not understand, because we reject what lies beyond our safe and comforting civilization. Abject is prior to the subconscious, it is an encounter with something primitive that has not yet manifested itself symbolically. In legends we already find traces of assimilation. Once we have verbalised the meaninglessness it gains a symbolic value. Once we submit to the symbols a new order arises:

*Sublimation, on the contrary, is nothing else than the possibility of naming the prenominal, the pre-objectal, which are in fact only a trans-nominal, a trans-objectal. In the symptom, the abject permeates me, I become abject. Through sublimation, I keep it under control. The abject is edged with the sublime. It is not the same moment on the journey, but the same subject and speech bring them into being [2].*

Often the folk legends portrayed the meeting with “the other” as a physical meeting, either because they look different (trolls are giants, huldre have a tail, draugen/ghosts without head and so on) or that it is actually a physical confrontation between the protagonist and “the other”. The sublimation associated with the folk legends somehow implies an embodiment of the uncanny. If meeting a character from folk legends can correspond to a meeting with avatars, can we infer that this meeting provides a tool to extend the language that can handle the feeling of meaninglessness?

The folk legends arose because they had no other terms for children with for example Down syndrome.

7. Utburden is a child who is murdered and not buried. The folk legends tell of places that are haunted by the murdered child. It is always a man who discovers the crime and there is always a woman, the child’s mother, who is the killer. The women are poor single mothers who are sentenced to death for their action. The child’s father is never mentioned.

F2. Catarina Carneiro de Sousa aka CapCat Ragu, Peasant becoming Skurekallen, 2012. Surekallen installation on Second Life.



8. Attganger means “walking back” – or to be more precise, it means ghost. This is one of the characters you find often mentioned in Norwegian legends. It has a number of meanings, beyond being a dead person. The usual description is that of someone who broke a promise, and the dead comes back to remind the person of the betrayal. However what inspired this group of avatars was the tale from a valley in Norway, called “Osterdalen”, the story of a child who dies and comes back. The child plays with her sisters and brothers, and the family grows so accustomed to the dead child that they forget she really is dead. The installation consisted of a dream-like children’s room, resting on a cloud, where one could hear the continuous sound of a music box. In the walls one could see the old photographs of

### 3 · The avatars

Second Life avatars not only enable this meeting, they actually allow the embodiment of the uncanny. One can become “the other”.

The Kromosomer avatars were built around the characters in the Norwegian folk legends as we mentioned before. They resulted from free interpretation through avatar design. Heidi Dahlsveen (aka Mimesis Monday), the initiator of this project, commissioned Catarina Carneiro de Sousa (aka CapCat Ragu) and Sameiro Oliveira Martins (aka Meilo Minotaur) to build these avatars. The two artists were given a document where a number of characters were briefly described. They were inspired by this document but had total creative freedom for reinterpretation of these characters. Three groups of avatars were built in articulation with the virtual installations in which they were to be distributed.

The Surekallen installation and avatars (the Peasant and Surekallen) were based on the myth of a grain spirit associated with the fear of being the last to cut the grain. If this was the case, one had to accommodate Skurekallen through the winter, or even worse, one could be forced to sacrifice oneself and continue life as a grain spirit, in order to ensure the spirit’s existence. For this a harvested cornfield was created, where an old peasant, realizing he was the last to crop his corn, transfigures into Surekallen (see fig.2). This scene illustrates the whole concept of these avatars, the possibility of embodying “the other”, the legends became a pretext for the exploration of a different kind of body. As we said before, through avatar manipulation in virtual environments one can actually experience the embodiment of “the other”. Nick Yee and N. Jeremy Bailenson studied this process of inhabiting alterity. These two researchers argue that “immersive virtual environments provide the unique opportunity to allow individuals to directly take the perspective of another” [5], and even suggest the possibility of embodied perspective-taking in virtual environments having an impact on the reduction of negative stereotyping [5].

Two more installations were created in order to distribute other avatars: the Attganger installation sheltered four avatars, the ghost and its earthly family<sup>8</sup>, while “Ocean Avatars” gathered some of the characters from “vannvetter”<sup>9</sup>, where five avatars

were given in the eggs of an enormous Sea Monster: Havfrue Melusina, Lindorm, Draugen and Kraken<sup>10</sup>. All avatars were distributed with full permissions, meaning that their new owners could copy, transfer and modify them, thus broadening the ways they could embody them. Second Life avatars have the characteristic of being very customizable, one can change one’s appearance quite dramatically solely with the platform’s interface. In addition, the platform also gives one the ability to upload content such as textures, meshes, animations and so on, whereby avatars can be customized to an unprecedented level. In this way the avatar designers are the residents themselves, through their own designs or through what other residents share or sell.

According to Nick Yee, N. Jeremy Bailenson and Nicolas Ducheneaut virtual environments can significantly alter self-representation. Their studies show that behaviour can change according to the avatar, not only online but in subsequent offline interactions as well. To these changes in behaviour resulting from the handling of avatars, the authors called Proteus Effect [7]. These findings have highlighted the importance of avatar design in virtual worlds, as embodiment can have a very real impact in both self perception and self expression, as Celia Pearce remarks: “If the avatar is framed as a form of personal expression, as performance medium, it is not hard to see the ways in which the components of the avatar kit dictate the forms of expression that occur” [8].



**F3.** Eupalinos Ugajin, Untitled, 2012. Elements of the Attanger avatar combined with other elements to create another avatar.

a mother and her two little girls. The avatars given there were the mother, the two sisters and the Attanger.

<sup>9.</sup> Folklorist Ørnulf Hodne distinguishes between “landvetter” and “vannvetter”, a distinction that corresponds to whether the character lives on land or in water [6].

<sup>10.</sup> Havfrue was a mermaid, half human and half fish. She was primarily seen at sunrise. Her face was beautiful and down her back, she had long, wavy hair, which she would braid while sitting on a rock. Melusina was quite similar, but with a more tragic perspective. Only one folk legend from a part of Norway called Helgeland mentions her. Because every Saturday half of her turned into a fish, she was unloved and evicted from her home after giving birth to nine children. Lindorm was a big serpent that guarded a treasure and was able to take people down in the water to eat them. One way

to get rid of it was by running seven times around a campfire while being chased by it and then lure it into the fire. Draugen was a drowned man who was never buried. He howled terribly at sea as warning. His scream sounded like that of someone in distress. He could have an arm with a claw and often rolled himself up in a boat, and then made himself so heavy that he would sink the boat. Kraken was a horror from the sea. If the fishing was good, one should be aware because it could happen that Kraken was around, one had to be ready to move the boat on in a hurry.

11. Residents of Second Life.

With the free distribution of the Kromosomer modifiable avatars, instead of dictating the design and subsequently the avatar expression, we aimed to promote residents' <sup>11</sup> disposition to have an active and creative part in the process of their own avatar design, as well as in the embodiment of the story itself as a character. These avatars became illustrations that enabled the public not only to actively participate in the telling of the story, but also to embody these characters in a creative and participatory way.

#### 4 · From the storytelling community to creative collaboration

The original avatars themselves were built in a shared creative process.

There are two different ways in which one may address this concept of shared creativity — one is through collective creation, the other is through distributed creativity.

When we address collective creation we refer to a creative process in which all of the agents involved act as one creative entity. This derives from a high level of intimacy between co-creators. In this case, CapCat Ragu and Meilo Minotaur constructed the avatars on an equal partnership basis in which each of them relinquished her own authorial mark in favour of the group's authorship. The complete dissolution of one's identity within a common one is of course utopian, but Capcat and Meilo worked as a plural organism or a two-headed monster. This kind of creative process not only requires a high level of intimacy but also complete trust and openness.

Another process of shared creativity began once the avatars were distributed, becoming the avatars of others, inhabited by different identities that could take them literally as the legends' avatars or radically transform them and use them to impersonate entirely new stories, as they are always "unfinished artefacts" [9], that can not only be used but also modified into a new creation. This brings us to an emergent concept born online, fundamental to this project: produsage.

Axel Bruns developed the concept of produsage to describe a new arising reality "emerging from the intersection of Web 2.0 user-generated content, and social media since the early years of the new millennium" [10], realizing that the conventional

sense of production no longer applied to "massively distributed collaborations [...] constantly changing, permanently mutable bodies of work which are owned at once by everyone and no-one" and in which the participants easily shift users to producers and vice versa, originating a hybrid role in between [10]. He defines the concept of distributed creativity as "projects which harness the creativity of a large range of participants to build on and extend upon an existing pool of artistic material" [10]. This can also be seen in online creative sharing communities based on the dissemination of visual output, from Flickr pile-ups to Creative Commons collages, such as DeviantART fan art.

Kromosomer avatars were just the beginning of a creative flux, in which users needed to become producers in order to fulfil their aesthetical experience of the project. Their productions would then "feed" the project through social media dissemination of this creative output. This would in turn become input once again, integrating the physical performance.

In our project we can also refer to Rebelo's distributed dramaturgy [11] where each individual is responsible and contributes something specific to a production. The idea of collective creation relates to a storytelling situation. Norwegian legends are part of the oral tradition, a cultural storage that is readily available for everyone within a given community. One of the important principles of this project was that the materials used were free of copyright, according to Norwegian law. The entire project, including process and performance, should be transparent and free to share and use without any compensation. Moreover, participants were free to interpret the material as they wished.

In the late 1990s Gabriela Kiliánová examined the social network around storytelling situations in Slovakia. Community and sharing of the stories appear as necessary to socialization and dissemination of knowledge, but there is also an aesthetic presence: "Storytelling is, on the one hand, a form of entertainment, a performance during which the audience appreciates the artistic qualities of the narrators. Yet, on the other hand, it is also a means of transmitting information and knowledge." [12] In the oral storytelling tradition the stories are part of the collective property; this is confirmed by Parry and Lord who researched the bards in the former Yugoslavia in the early 1930's [13]. The bard performed



for an audience who knew and had a sense of ownership of the material. This condition affected the aesthetic on several levels all the way down to the dramaturgy of the moment [13].

The community's ownership of the material is similar to the pro-  
dusage concept. The term includes the collective and sustained  
expansion of existing content in order to improve this:

*When – exactly because what takes place here is no longer a form for production in any conventional sense of the word – the outcome of these massively distributed collaborations appear in the form of constantly changing, permanently, mutable bodies of work which are owned at once by everyone and no-one, by the community of contributors as a whole but by none of them as individuals [14].*

Furthermore a low threshold in terms of participation characterizes produsage, artifacts are unfinished in favour of a continuous process and the hierarchical structure is floating [14]. Picone stresses that within this definition the commercial market values cannot dominate: "Still, it is an amateur-driven, non-profit way of producing information." [15] The focus is on procreation and not consumption. In our project, roles were often blurred and without clearly defined limits. We navigated between creation, procreation, and recreation without prior agreement, as did all sorts of participants. This was influenced by and influenced temporality, where kairos were cultivated over chronos [16]. There were no fixed working hours, one floated in what occurred. There were only a few coordination points like deadlines and performance times.

Yet, there are important factors that might extend beyond the term produsage. If we go back to the storytelling situation, we see that the collective also highlights someone who will manage the community's knowledge [13]. There are some who have the talent and knowledge to level information up to an aesthetic experience. The project's initiative and input did not arise from an information need, but had an inherent power to create and the desire to seize the world with a rich multivocal language, to inspire aesthetic experiences. People who define themselves as artists, who were paid, created the project's framework and the

arts council supported the project. It is necessary to stress that the artists worked with as much intensity and commitment as in any art project. The paradox and the tension was that they gave up any ownership as soon as an artistic contribution was made.

## 5 • Metaphors

We call our work process a metaphorical way of working because in new connections and meetings, we seek to articulate and give meaning to issues that concern us: "metaphor holds two thoughts of different things together in simultaneous performance upon the stage of a word or a simple expression, whose meaning is the result of their interaction" [17].

The metaphor has been understood as a stylistic figure of speech, mentioned by Aristotle in Poetics. Traditionally, the metaphor had two functions, or belonged to two different disciplines: Poetry and Rhetoric. The metaphor's two functions are the creative and the ornamental: "The second seeks to persuade men by adorning discourse with pleasing ornaments, it is what emphasizes discourse in its own right. The first seeks to re-describe reality by the roundabout route of heuristic function" [17].

One of the pioneer founders of contemporary metaphor research I. A. Richards claims that metaphor comes from something basic in our consciousness. We always think two thoughts, or more specifically, our thoughts are making comparisons. We think two things at once and our thought creates an interaction between them. That is the way a metaphor operates [17]. A metaphor is not a substitute – something instead of, something that occurs when you replace a word. A metaphor is an interaction between two concepts, it appears as a whole and cannot be replaced, cannot be said in another way. In its juxtaposition of two concepts, the metaphor takes something from the concepts and creates something new. In this way, one can also say that the metaphor is like a bridge between old and new knowledge. In the juxtaposition between the two concepts a number of specific connotations is activated. The metaphor works as a filter in order to promote a number of properties [18]. A cliché of a metaphor is: The girl is a rose. The comparison evokes something recognizable latent in us, it highlights certain properties at the expense of others. When we see the concept: The girl is a rose, we do NOT think that she is red

and has thorns.[19]: In this way metaphor confers an ‘insight’. Organizing a principal subject by applying a subsidiary subject to it constitutes, in effect, an irreducible intellectual operation, which informs and clarifies in a way that is beyond the scope of any paraphrase [15]. It is not the case that you can take any “two concepts” and expect that a metaphor occurs by itself. It requires knowledge, ability and talent to generate new insights. In the virtual environment of Second Life the experience of the body is mostly conceptual and not exactly an experience of the flesh. One cannot deny, though, a perceptual and sensorial aspect to embodiment in desktop based virtual worlds, but they mostly continue to be experienced through our organic body, not our avatar body. That is the body that sees, shivers, gets aroused or sickened by something. Yet, it’s the avatar that walks, goes places, reaches for objects or other avatars, etc.

Jacquelyn Ford Morie emphasizes that the virtual world is not completely imaginary, but is still “not fully based in solid physicality” either [20]. This is a world that has abstract and variable dimensions, consisting of bits and ruled by conditional behaviours, we experience in a metaphorical way, through simulations [21]. Lakoff and Johnson suggest the importance of metaphors based on bodily experience, in how we think and act upon the world. The authors consider that the ordinary conceptual system is fundamentally metaphorical – the way we think, what we experience and what we do every day is a matter of metaphor. A significant part of our concepts are organized in terms of spatial metaphors: up/down, in/out, forward/backward. These metaphors are rooted in our physical and cultural experience [22].

The metaphor is fundamental to the way we interact with the computer. When we drag an item from our “desktop” to the “trash”, we are merely providing a command to the computer to delete that object. Most current operating systems work through this kind of metaphor which, according to Murray, is fundamental to the design of digital interaction [21]. As regards the avatar, these metaphors are further extended, enabling one to feel as if she can step into the computer and fully experience the virtual environment. In fact, this metaphorical dimension of the virtual body enables a poetic appropriation of this kind of corporality.



**F3.** Sameiro Oliveira  
Martins aka Meilo  
Minotaur, Little  
Attganger playing with  
his sister 1, 2012.

## 6 · Conclusions

Legends are already a way of trying to assimilate and give symbolic value to the meaningless, a sublimation, an attempt to name the prenominal: the other, the not normal, the one that looks “different” which we want to distance ourselves from; or the abject, something outside both subject and object, prior to the subconscious, something primitive not yet semiotized.

Often the legends portrayed the meeting with “the other” as a physical encounter, but by using avatars in the metaverse one can experience the embodiment of “the other”, this can be a process of actually inhabiting alterity, possibly providing new tools to extend the language that can handle the feeling of meaninglessness.

Second Life avatars are unprecedentedly customizable, giving its residents the ability to become the designers of their own avatars, making embodiment an aesthetical experience that is in fact a creative one. The free distribution of the Kromosomer modifiable avatars promoted a different kind of relation between artists and public, in a project that might stride against traditional roles. Instead of expecting a solely contemplative audience to an artistic performance, we proposed a shared creative process. This included the collective creation of the avatars and the distributed creativity that was constantly arising as derivative of the unfinished artefacts that we delivered.

This is in fact a very similar process to oral tradition, a cultural storage that is readily available to anyone within a given community, a distributed dramaturgy where each individual can always contribute something to the ongoing process of building a story. In this case, produsers could actually be a part of the story, as they would literally go into another world to take part in the project. This occurrence has similarities to the context of legend story telling – it is an event framed by ordinary life.

The way in which one takes part in it, however, has a metaphorical dimension, arising not only from metaphors embodied in our interactions with computers,  $\neg$ , but because the metaphor itself comes from something basic in our consciousness – our thoughts making comparisons. A metaphor is not a substitute, but the concurrence between two concepts; it functions as a filter, in which a number of specific connotations are activated in detriment of others. The insight produced in this way has a poetic function.

The virtual body is a metaphorical one and therefore a body of expression and language. If we think of the avatar as a body/ language entity, open to experimentation and possibility, then by offering them copy-enabled, transferable, and most importantly, transformable, we became more than authors, creators or artists: we were partners in a shared creative and poetic flux.

To work in such a project is to follow the strategy of thought. By freeing us from space and time and working with what arises in creative meetings between diverse artifacts such as folk legends and metaverse avatars, professional artists and amateurs, different disciplines, different interpretations, we achieve a poetic function: “In service to the poetic function, metaphor is that strategy of discourse by which language divests itself of its function of direct description in order to reach the mythic level where its function of discovery is set free” [17].

Kromosomer showed us a completely different way of working within artistic production. From there other parameters and consequently other possibilities arose .

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## NEW PACE APPROACHES FOR DIGITAL STORYTELLING

A practical case



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### Abstract

One of the new developments under digital storytelling is about the control of the story pace. Within the interactive media such as the multi-touch devices, a series of new ways for the story flow are emerging where the reader is an active part of it. This reading experience will bring new ways to conceptualize a story given the new dimensions available such as the animation, interaction and sound. A more collaborative work between authors, designers, illustrators and developers will be demanded where each one knowledge of the other ones areas plays an important role to get an aligned digital story. A current under development digital story for children will be used to illustrate some concepts, issues and trade offs assumed.

### Keywords

digital storytelling, reading pace, interactive books, iPad.

## 1 · Introduction

On a printed picture book for children, words and illustration must work seamlessly in order to delivery a great story, a story that resounds. On interactive books, as the words and pictures relationship is increasingly being challenged, the same should happen also between interaction and the rest. The introduction of interactions within the story, in some way, determines the pace of reading. So, the more fluent and creative these relations are developed, the more interesting could be the interactive book. The ideal is to obtain a global result greater than the sum of the parts, words, pictures and interactions.

Introducing interaction and animation normally brings some life to the static qualities of a printed book and at the same time represents a set of tools to explore the story world during the reading experience. But the interaction shouldn't only bring life to pictures and words, it should also reflect and expand the meaning of both filling seamlessly the gaps, conducting the pace of the story. This paper presents a case study explaining how the interaction was applied and explored on a children's interactive book.

## 2 · Stories on the digital era

Digital stories are not new. What is really new is the development and growth of mobile devices, their capabilities and the multiple uses people are making of them. An undetermined set of pathways are yet to be discovered, we are at the beginning of the exploitation of these devices as tools and medium for storytelling. All this is newness. New combined technologies, new platforms, new audiences, new ways to engage, new ways to tell stories and new perspectives about learning and apprehension processes.

We have decades of thinking on books like we have them today, we are not used to think books given the possibilities the digital can offer. We are assisting to an explosion of e-readers and the unleash of an increasingly number of children stories under an interactive foundation. The major of them are print titles that are being translated into digital using a variety of solutions, but mostly a quasi direct translation from what we have inside printed books. If this can work well on fiction and romance, on children picture books it can be of little value compared to print versions.

To explore new perspectives for telling stories, express new

artistic forms and new types of connections between readers and authors [1] it is important to be aware of the technologies inside these new mobile devices.

One of the critics being posted about digital interactive books for children is that they offer too much distraction, something that can lead us to ask if we're building interactive books or distractive books. A recent study about print vs. digital reading and co-reading shows an higher level of engagement on digital books compared to printed ones, but on the other hand it found an information retention level higher on printed books compared to digital [2]. Nowadays we are faced with a lot of technologies that demand us processing a lot of information, leaving less time to think, as said Carlyle [3] "it is now scientifically accepted that the strain of processing so much data means we are becoming disconnected from other people."

It is publishers, producers and developers role to behave with responsibility building content on this multi device era, and introduce mechanisms that kept the desired level of thought but also take him to other levels of a reading experience.

We believe the interactive dimension of digital books have an huge impact on the pace of the story, playing hence an important role on the children reading experience and story apprehension [3]. An example is the way multi sensorial approaches are putted together along the story and illustrations. Words, pictures, music, sound effects, dynamic characters and objects, all together should be expressed consistently, avoiding the tendency to use technology just because it is available and makes something possible. Other way we are building distraction points. Next, we're presenting a case study describing the solution founded for pacing the story on an interactive book for children.

## 3 · Case study

The case study is based on a book app under development by Ardozia, that is a set of small stories, where each one creates an imaginary world or environment mixing the real with the impossible. The story sentences have a natural balance and progression that raises something being constructed.

*Here's an excerpt from one of the stories,*

*Uma cafeteira velha sem pega é um vulcão*

*Uma cafeteira velha sem pega, cheia de doce de morango é um vulcão cheio de lava ...*

For this interactive book we've decided to develop a book app and not an ebook, due to the level of interactions in place. We wanted also to guide the reader exploring their thoughts about what is reading and not just looking forwarding for the wiggles and giggles of interactive elements. We've tried to achieve this by managing the way the pace of the story was translated into the digital media. One tool we found for this is the navigation mechanism of the interactive book.

### 3.1 · Navigation mechanism

There are currently a lot of book apps available internationally on the app stores [4], and from the ones we've seen we reached the following types of navigation flow:

'Back' and 'Next' navigation. One of the most closest to page navigation like we have on physical books. The story is splitted in a sequence of scenes and the reader will have on the screen some graphical elements or touchable events to advance on the story (Fig. 1).



**F1.** Wrong Side of The Bed book App from See Here Studios

Viewpoint navigation. It's based on a dimensional space that covers all the story, being normally greater than the device screen. The reader navigates the space moving the viewpoint window (the device screen) along it. It's a kind of more exploratory navigation, used in some digital solutions for cartoons (Fig. 2).

Interaction navigation. Invites the reader to interact with the scene in order to advance on the story. Typically the reader must interpret the scene and after, in a simple or more complex manner, build, solve or unlock something in the current scene of the

book app. It's also very engaging for the reader (Fig. 3).

Other types may exist including some combinations of the these previous ones.



### 3.2 · Pace of the Story

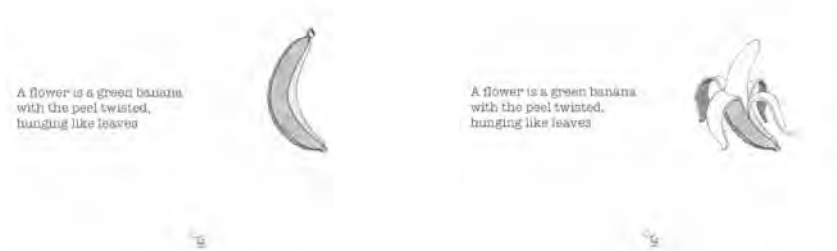
The pace of the story on printed books is mainly conducted by the writer, the way he writes and develops the story flow, but inside this new media and interactive devices, a new set of possibilities are emerging to control also the pace of the story closely with the authors, like the interaction and animation. The book used in this case study was built for the interactive digital media from scratch and we have decided to use the interaction navigation for pacing the story. Instead of usual next and back touchable elements to control the story flow, we have made it combining the reading with the interaction. That way we want the reader to really engage with the story thru the book app experience in a coherent and interactive way. All the interactions are completely connected with the story, in fact, they are also part of the story.

**F2.** Roxie a-Maze-ing Vacation Adventures from OCG Studios/ Roxie Munro

**F3.** The Gift from Persian Cat Press

The expected reading process consists on the following two steps approach:

1. Interpret the sentence in relation with the presented illustration (Fig. 4)
2. Interact with the illustration elements (Fig. 5)



**F4.** Text and illustration presented to the reader

**F5.** Reader takes the action (swipe down) to peel the banana

If the reader makes the right interaction the story advances and the process begins again. If not, it will be presented a hint about the correct interaction. The figure 6 shows the screen following the interaction on this scene.

The story begins with the first sentence of the story and some illustration elements. Then, the reader must interpret about what is going on there in order to interact with the illustration on the right way. If the interaction is successfully completed the story advances. In the book app for this case study the process seems to work well due to the building blocks nature of the story that is translated also to the illustration. The interaction can be of different types, some examples are, touching an element, a swipe gesture or a touch move event to drag and drop parts of the illustration.

We believe that exploring this kind of interaction/navigation relationship we can get a more controlled pace for the story, avoiding some distracting levels caused by animations and interactions, and using them to be part of the reading experience. The reader is invited to build the story illustration.

## 4 · Conclusions

Of course there are some points and questions that can be raised about the interaction navigation we've used.

1. Introducing a non linear flow on the story;
2. The struggle of the reader that does not know how to advance on the story;
3. It's a book or it is a game?

As we said before, we have a lot of years thinking a book based on it's physical form,

with their natural navigation based on next and previous page actions. The first point is about how we react to experiencing a book, or story with a non linear navigation to advance and backward on the story. The second one is a bit tricky because each reader has its own perception of the story and illustration and can behave in a different manner. What is being done here is to provide some hints, on demand, to unlock the right way to interact with the scene. Of course, the level of aid to be given also depends on the authors mystery level they want to put on the story reading experience. The third point we think is not so important, since any children book has games and challenges of ideas and thoughts, like the counterpoints on printed books[5].

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# VÍA TANGO, A LIVELY DANCE



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## Abstract

This article presented here, is to investigate how the animation could be related figurative animation and dance, asking whether the architecture of movements that generate both artistic disciplines share common goals. Serve us a case study the animated short film Vía Tango [1], which largely used as foundation and dancing axis around which has turned the entire production, we'll see if the media animated choreography and be able to work on the same assumptions, for finally wonder about the meaning of the animators might appreciate dance and mobile reference.

## Keywords

Vía Tango, dance, animation, music, choreography, synchronization, timing.

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## 1 · Introduction: dance and animation.

Since its inception, cartoon animation showed an affinity for dance. Gertie's performance before an dinosaur audience, we are amazed by his "credibility" performative and Felix The Cat takes on Chaplin's own pantomime, dance repertoire evolve toward a more acrobatic technique, then view the Nicholas Brothers tap dancers. Even the animators abstract dance share the sense of timing and rhythmic sensibility. Disney's Silly Symphonies dance movements showed fantastic creatures, such as "The Skeleton Dance" (1929) and Mickey Mouse phenomenon whose dance movements so close (even the emphasis on choreography could be seen walking, think of Fred Astaire (1889-1987) in "Funny Face" (1957)) humanize the rodent. The animator Frank Thomas (1912-2004) was inspired by the dancer Gil Lamb (1904-1995) to animate the character Ichabod Cane, star of "The Legend of Sleepy Hollow" (1949).

Fantasy (1940) is one of the most popular films by the use of dance, being the scene of the dancer and his sidekick Hippopotamus crocodile, one of the most outstanding and can be a funny parody of the film "Goldwyn Follies", conducted in 1938, two years Disney's creation before. The prestigious dance critic Mindy Aloff (1947) wondered what it meant for dancing animated characters, what motivates them or drives them to act dancing, what was the dream of hippopotamus dancer wearing a tutu? These issues arise enable dramatic function sequences, "developing". But not only borrowed references animators art of dance: the dancer María Pagés (1963) recently has been based on the sketches of the architect Oscar Niemeyer (1907) when creating his choreography "Utopia" based on curvilinear strokes of the designer.



Given these references, we go into the study of the supposed correlation between dance and animation[2].

Dance is a great way to create visual figures and as a reference for the animation as it is in itself majestic dynamism of the human body. Both disciplines share a purpose: to express feelings and emotions through their movements and gestures, studying human movement and the ease of implementation, avoiding the rigidity and working according to the staging or scenery. The dancer controls in an accurate, precise and refined movements of his own body, and in turn, the animator, exhaustively cataloged the movement, translating and capturing the illusion of life (and the illusion of life in dance). The fine control of movement involves a defrag, a comprehensive breakdown to carry out a detailed analysis on it, it goes through several changes of position, location and speed. The dancer and entertainer have to internalize the rhythm to move (it), understanding the structure of the movement, of which it is composed, how it starts and how it ends, how much force is to be employed in its execution, but not falling in the facsimile. This leads us to link it directly with real actions, dance and natural movement or recreated (think standardized ballet poses, for example, in which the movement is "approved"). Dance and understanding animation deal with shapes and silhouettes that describe to the public a quick read profile, defining a space with the body, which could well be the air that surrounds the character or the dancer, a time in fixing the duration of the shares subject to change, and a rhythm, a cadence that metrically regulates a rhythmic order, a speed in the sequence of actions. These four items (shapes and silhouettes, space, time and pace) could well be the pillars underpinning the dance and animation.

Usually we express ourselves through movement, connected with these emotions, woven, and the excitement it could be a movement, however slight it may be. (As frowning, for example). Motion-Emotion is central to achieving an animated film or a choreography on stage. Dance is a universal form of expression, which uses non-verbal language, which is ideal for animations that are in the dance that power tool body expression without using the spoken word, and using it as the main driver of the action. These arts, so closely linked, give way to a possible artistic symbiosis: the correlation of both disciplines giving rise to a new con-

tribution, the fusion of the plastic image and movement, dance in the cinematic context.

## 2 · Via Tango: the dance step by step, frame by frame.

Via Tango was born as Final Draft in the First Edition of Masters in Animation at the Polytechnic University of Valencia, directed by Adriana Navarro Álvarez and tutored by M<sup>a</sup> Carmen Poveda Coscolla, the Research Group Animation: Art and Industry. This short part of a clear idea: making an animated story from a melody by undertaking a systematic procedure to animate characters properly from a sound track, a pre-existing music and image simultaneously directing the audio. Via Tango is a romance told through musical choreography. It's a classic story of idealistic character, which develops a love story, and melodramatic comedy tinged with linear plot.

This project was a challenge because it meant keep the following aspects:

- 1) The music used to develop a priori a proposed animated image. The music is "applied" to the film. Therefore, the image must be guided and guided throughout by the music, fulfilling this function when rail organize actions and plot quality. Establishing an empathetic relationship with the image, immediately adhering to the feeling suggested by the scene or characters: passion, excitement, joy, etc.. Moreover, the inherent synchronization of images with music, in which the sense of rhythm is to mark the direction of movement, timing.

- 2) The breakdown of the different parts that made up the musical composition, to plan and the pace of the narrative, dividing the story into sections of length and synchronization points.

- 3) The establishment of an intellectual and emotional communication with the viewer.

- 4) Put the same level dramatic sound world and the visual world, careful interpretation of the characters and narratives seeking the best solutions.

Examined these points, we should not overlook the frequency with which the music is used in the field of dance and animated films, and by extension, the film in general.

In his dramatic level, the music suggests the narrative order, act-

ing like a baton, constantly giving new perspectives to the film or dance, bringing new dimensions, greater depth or aspects not covered by the images themselves. The music creates the atmosphere for the scene and emphasizes the action, setting the pace that makes the images do not materialize but visually. The dramatic level of music determines the characteristics of the characters, accompanying and leading to feelings that fit the melody conveys emotion. If it is very passionate and extreme tempo changes, therefore the characters transmit their feelings and act in exaggerated form, dramatizing their actions so extreme and excessive, joy more joyful to the deepest sadness. This will also lead to the adaptation of a graphic style that reflects the impetuosity, adopting an aesthetic cartoon, close to the UPA, in this case. In Via Tango music does not work as mere accompaniment or background, but that works itself as a narrative. The theme used initially for the project was "by a head" composed by Carlos Gardel and Alfredo Le Pera in 1935, and used in movies like "Scent of a Woman" (Martin Brest, 1992) and "True Lies" (James Cameron, 1994). This music, passionate and romantic, is a means to highlight the excitement, bringing to the surface the inner thoughts of the characters and the viewer transferring certain sensations.

The adoption of this score, which originally was not designed for the film story has served to give more credibility and significance to emotional scenes, highlighting the moving image where there is a synchrony between the visual and the sound. However, due to the high costs involved the acquisition of copyrights and producer, eventually decided on the collaboration of a professional musician, Rafael Montañana, who agreed to make an



adaptation, using the animatic, to become me in the final soundtrack *Vía Tango*.

Then we will see, as a descriptive account of what is the short film *Vía Tango*, since the end of the day, this work has been the subject of reflection by the author:

*Vía Tango* is an exciting journey on a train of fantasy, in which the reviewer falls for a passenger. Along the way, tries to seduce a tango rhythm, but to his surprise, another woman also wants to court you.

The train becomes a dance floor, a product of the reviewer's boundless imagination, where everyone is dancing and dreaming.

This film 2D traditional animation than two minutes and thirty-five minutes long (2 min 35 sec) begins with lines that follow a cheerful violin improvised music. This is the train tracks that follow the playful and lively rhythm of the melody, an Argentine tango, and bend and twist each other, on a blue background, we can recall the paintings of Yves Klein (1928-1962) and Paul Klee (1879-1940). These lines are converted into a spiral that leads us and usher in what will be the first recognizable figurative element, a train station, apparently simple and peaceful. The next scene shows a dark red train, consisting of three wagons, rails flowing through winding amid a green spot between mountains. This train seems to dance all the time and follow the rhythm of the music. It's a fantasy train, modernist, passionately moving, leading to its passengers on a journey that will, for some, unforgettable. This train will go a dreamscape, a bridge surrounded by rich greenery and illuminated by the evening lights. Inside this very special train we meet a very special character, and whose role is decisive in this story: the reviewer blue. This man is responsible for carefully checking the tickets, the convenience of travelers, in short, to make the journey pleasant, because he is a kind, caring and sensitive, but still has not found someone to share his life and his train. The reviewer is completely blue, stout trunk and lower extremities agile and slender, elegantly dressed in his uniform. Instead, passengers occupying a seat in the car, are all the same color beige, so as to form a character set or group. Like every day, our reviewer blue collects and verifies the banknotes in a rhythmic, exaggerated poses, making twists and turns, while passing from one passenger to another.

However, on this trip something unexpected happens: a beautiful pink passenger reading a book intently, he has stolen my heart. She shows her charms with flirtatious winks and captivating smile. Like the blue reviewer, is a young woman who has not found love, and takes refuge in literature. At the time of the crush, the train makes a heart-shaped trajectory, the reviewer and the train is a single beat. With so much emotion, this train is metamorphosed into a ballroom in the dream of our love friend protagonist. The same characters we saw on the train, now appreciate in this new scenario: Customers are customers of the room, around the perimeter of the stage, in whose center is the beautiful Miss Pink, the hall has turned into an exquisite cafe the same decorative elements of art nouveau. The blue reviewer changed his uniform with a more appropriate for the occasion: a tuxedo suit. The reviewer unfolds its charm blue dancing round his beloved rosacea, it notes with a mixture of shyness and care. The blue reviewer dances to woo the single passenger, completely forgetting himself and his condition routine. His reverie takes inadvertently tripped with another passenger, the Yellow Lady who mistakenly believed that the reviewer has tried to seduce her. She also is looking for a soul mate (or rather, his half lemon). The Yellow Lady is a plump woman of considerable size, which takes the reviewer blue as a dance partner. He's so excited, he closes his eyes, living outside the true intentions of blue reviewer who tries unsuccessfully to escape from his arms. Finally, get run down and exit the scene, at which point a group of passengers are encouraged to dance in the middle of the stage. At one point, the blue reviewer and Miss Pink are facing each other, but their meeting is brief, as a crowd of passengers heading for the exit, they take the girl. The reviewer blue back to reality, that the train has reached its destination, the station. The reviewer blue looks through a window of the car, where he sees how the crowd going and passing the beautiful rose that stares back. The blue reviewer can not bear the separation, and deeply saddened. But something catches their attention, they will provide a key for hope: in one of the seats is the book I read Miss Pink. She takes it, and when you open it, you can read a brief message to his beloved that he will comfort and will make way for a chance to meet again ... and start their love story.

### 3 · Dancers pencil: Binding of entertainer and dancer, repetition and rehearsal.

The animators are usually call actors with pencils, but somehow, also resemble and behave like dancers. Both use time, space and rhythm and body movement used to tell stories and identify characters. The skill of the animators is assessed in terms of capturing life in this case, dance. Develop the capacity of gestural forms, steps and poses, which also shares elements with the choreography, with the underlying knowledge of joints, weight, strength and flexibility.

Before undertaking further analysis of this article, let me examine the role of dance and choreography: Expressive communicative possibilities of nonverbal communication and increased self-awareness (in this case, the dancer) markedly influence the form and content of motion, modeling the multiple possibilities of it, and allowing the development of artistic and emotional capacity of the person performing the movement. The dance facilitates expressive personal knowledge and creativity, improving body language, and rhythmic-musical education. The dancer trains daily style dance, learning their characteristic steps on one side, and on the other, improvisation, serving as technical warm to ultimately develop the choreography. They apply the steps learned or tested at the same time developing memory, rhythm and dance. It is essential to know the dancer improvise, to treat its axis and be in contact with the ground. Meanwhile, the host prepares his performance after learning in detail the characteristics of personality and character design. The behavior of this and their reactions will be closely linked with their physical characteristics and their locomotion.

As noted above, dance and animation share common values: technical training and communication of emotions and feelings. The dancer artist uses his body to perform a set of movements to the rhythm of musical compositions, generally, while the artist animator, produces a continuous motion using a technique and rhythm set before starting to animate. When we talk about the style of a dancer define a number of basic concepts about your personality and movements. The dance represents in some ways

the personality and lifestyle of the dancers. The ballet style is very strict and disciplined. The movements and the lines are soft, looking delicacy, although it would be an illusion to think that a large force is needed to complete each step. In jazz, however, the movements are more relaxed and fluid, and shows another intention, more aggressive, perhaps. Seeking strength and the different changes in the timing.

For Vía Tango sought a kind of hybrid genre: tango expresses passion for excellence, but we opted for a closer to dance ballet, but giving it a touch of unusual energy, an adjunct jazz. This variation is due in large part to the desire of the designer in developing different stylistic trends, exploring new ways of moving. The ballet means flexibility and strength, which are clearly interpretable in the animated field, and jazz improvisation allows more execution steps.



We can lean on one style or another, by a more rigid or regulated, or otherwise where ingenuity comes into play, in any case, we prefer good posture or pose, and harmonious movements.

We must remember the obvious: the staging of communication content, timing, strength, containment, braking, are essential foundations of which we never desasirnos. These are issues that phrase as a choreographic blend style and teaches us to use the body. This conveys intent, and we must know how to distinguish the role of each part of it, how to use it and the chances that he provides. The weight transfer, balance, self-management and the common axis with the partner or another character dance, tension, relaxation, rhythm changes, vibration. We must insist on the

value of the movements, angle, placement of limbs. In short, attending to the perception of the body and this allows us to manage with ease when we master these springs.

In *Via Tango*, as is evident, the use of dance is essential. The tango dance becomes a literary device that articulates various times in short we could categorize choreographic: the procession of the reviewer to Miss Pink, which through its steps and acrobatics tries to impress his beloved dance as seduction, as an act of pure communication, the Lady Yellow dancing and the reviewer, a dialogue of bodies cemented in developing improvised finished a figure, and invent other than what you do will be in relation to what then the other partner, the conductor of the train through the halls, reveling in his body stretches while checking the ticket, playing with the musical stimulus ... Perhaps one of the most remarkable passages is when the passengers themselves part of that universe created dance by the reviewer and act on it, participating and joining the choreography, juxtaposing the swarm of bodies and hiperbolizando postures, moving and moving as if it were an entity coalescing. The train itself also dances on the rails, either turning on itself or accelerating or stopping as the music dictates. The dance as pause, contemplation, action contained, represented by Miss Pink, who intends to remain still “dancing”, enjoying the sensory delight of romantic courtship and dancing with allusion to frustration when the reviewer feels the loss of a loved. The passengers walked to alight the train could be considered as the first attempts at artistic expression of movement, the basic form of the dance. You will notice that even swaying to the music, all figures and movements are doing different.

Then, it presents a brief description of how both disciplines, dance and animation converge and feed:

The entertainer and dancer use body language to express emotion so enlightened that dictates the script, choreography or the score. According to the animator Preston Blair (1908-1995) has been studying the movement more expressive and clear once you specify the character's mood. Isadora Duncan (1877-1927) pioneer of modern dance, rejected academic standards or codes of ballet, as it saw encorsetaba natural movements, disarming the composition of stereotyped figures. By moving your body, the impressions of the movement drew inspiration from nature,

connect with aspiration moods. Unfolded their learning based on the natural development of everyday movement. In contrast, Alicia Alonso, (1920) another great figure of twentieth century dance, argues that since the discipline and rigor of classical dance can be a development and technical evolution. The dancer Martha Graham (1894-1991) used to say that the movement never lies, distinguishing between technique and charisma. The search for dramatic level of animation and dance is similar, the primacy of the image and movement, even artistic expression. The sum of elements like action, line, color and rhythm put us in connection with the merger expressive drawing, dance, music and poetry.

There artistic values shared between an animator resolving a dancer expression and interpreting a character, such as line shaft or body, cleaning (ie, using the necessary movements, without adding unnecessary, and accurate placement of positions) and the economy of movement, among others. Technical training of the body as an instrument and training the eye to grasp the movement, are necessary to achieve greater expressiveness, and even more if dialogue themselves. It could even set a parallel between the number of hours that a dancer needs to repeat again and again the same movement and the large number of drawings used to recreate an animator. In both cases, you must debug the style through trial.

When training the eye, studying the footage of dancers and attend live performances, bringing dancers to study for a more precise and scrupulous scrutiny.

Elements such as the ticket and book reviewer in choreography conditions them: the conductor is stretched to better see your ticket and Miss Rose proposes a more leisurely movements to hold the book in his hands.

*Via Tango* distinguishes choreographed dance performance (time of courtship and dance with the Lady Yellow, which parodies classical dance, as the obvious physical disproportions between the couple, the combination of shake and exaggerated) and physical activity (collecting tickets with accents mannerist, verging almost dance in which elements such as the ticket in the book reviewer conditions in the choreography: the conductor is stretched to better see the ticket and Miss Pink proposes a more

leisurely movements to hold the book in his hands).

In this animated universe, where everything is possible, even dances on the train rails together with the movement itself that we see in reality. The real and fantastic movement (when the reviewer flies over the heads of the passengers during courtship of Miss Pink) are combined to form an eloquent and emotional dance. Through dance, blue reviewer reveals his true character, transforming physical (change of attire of tuxedo dress uniform) and psychologically (infatuation unleashes his power and takes even break the laws of physics, allowing extension your joints and expansive postures).

#### 4. Conclusions

The dancing and figurative animation are about human relationships. There are endless variations, so many ways of dancing and cheering, is a constant search for aesthetic pleasure. The body communicates beyond words, emphasizing the intimate feeling. Dance and animation share gesture and communication, without telling a story, but to communicate feelings, being the human body working tool for the dancer and immediate reference for the animator. As leaders we have a responsibility aurally sharpen our body, because we are better able to assimilate a mobile environment by understanding our own becoming kinesthetic, our style of walking, for example, paying attention to the elegance of the movement itself. The great author of dancer and entertainer is the passage of time, ie, constant practice, you will help us not live as slaves of choreography dose sparing no inventiveness, denoting mechanism and lack of emotion. The key lies in the art, but united and bounded by sentiment. Rather than developing endless juggling figures and imports the train of the same, combining emotion and intellect. In synchronous development and evolution of our experience each choosing what is best interpreted, our personality will be screened at the synergy in which we are subject, but the pleasure of dancing and encouraging, must always be accompanied by the dominance of the technique. They dance and animation evolve and new forms appear, being vital improvisation, being a continuous present.

The great Italian tenor Enrico Caruso, (1873- 1921) was a big fan of tango and befriended Carlos Gardel. When he heard the

musician, wrote these words: “I like the tango because it’s a small little opera in 3 minutes. A drama or a comedy short, foreword, middle and end.” It could be the perfect definition for *Vía Tango*. The music has a dance animated content itself. The fact that music is a tango choreography does not mean necessarily have to follow the steps set the same. The animation is free to take what you need, without the required (reverence?) choreographic academicism.

Emotions flow of the process, and every action, whether translated to gesture, posture or gesture is refined measuring tempos and dramatic accents, getting to decide on assembly, including the final cadence.

The idea of chance, the chance encounter of the randomness that can alter the course of our existence is present in the work of *Vía Tango* and how that change includes inert matter (think, for example in the train running through these heart-shaped tracks on a journey into the sensible).

Applying maximum the composer Anibal Troilo (1911-1975) that “any further simplification is an perfectionism” in *Vía Tango* sought at all times pay attention to this idea: the color palette of the characters, the choreography presented, the history of classic content, which as noted Caruso referring to tango “is a small little opera”.

For the genre in which we move and that is preferably conducted in a scenario, the “real” or “imagined” is interspersed. Occurs in *Vía tango* one hand is the train, we might think that is the reality and then transforms into a dance floor, which could well be a dream of blue reviewer. In this idyllic setting, we can see that passengers are not involved in it, but remain distant and the only ones in this fantastic setting would be the three main characters, although at one point, passengers in addition to the dance, although it could again be the fruit of the imagination of the reviewer.

In the narrative, as in our lives, the real and the imagined and sometimes intermingle, without reaching which is which and why formally altering the characters is minimal. What may have something to do with the short *Via Tango*, once? As with the search for the other, to tell a story that will captivate and bring pleasure, to put a kind of mirror in which you can feel reflected. If there is

another, necessarily have to agree that there are at least two points of view, to be conjugated to suppose that talk about the same. The situation is complicated somewhat when instead of two, three characters involved and the possibilities for agreement, remote. We can not stop talking about music. Abound which is what ultimately guides and directs both the “camera movements” as the “attitude of the characters” being perhaps the main driver of movement and emotions. That tango, which requires at least two people to be danced with foundation, is the value of a mainstay in the work. Is it possible that each have a kind of inaudible sound repertoire, we mark the type of dance we execute in our life?.

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[1] You can see on this link :

<http://www.youtube.com/watch?v=pQIuzRsNu3k>

[2] This would be figurative animation, since no animation not working on human behavior and some do not even have characters.

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# LOOP NARRATIVES

An Interactive Approach to Storytelling



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## Abstract

This paper represents an illustration research project developed during a Master degree in Image Design. The project falls into the area of digital publishing, a new form of communication that challenges not only editorial, but also image and communication professionals. To approach this subject, this study considers a particular product of the editorial industry, children’s publishing, positioning the relation between image and storytelling as its main study focus. This research proposes an experimental approach to the development of an iPad app that prioritizes image as a narrative device. It is characterized as a personal and authorial project, reflecting on illustration as language identity, construction of imagery, but especially, the definition of a conceptual approach that will support the creation and construction of future projects. The background of this research is based on literature review, case studies, studio work and several interviews with illustration, animation and publishing professionals.

## Keywords

Digital Publishing,  
Illustration, Interactivity,  
Multimedia, Storytelling

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## 1 · Introduction

With the introduction of e-readers and digital tablets the editorial industry faces a rapid transformation with consequences on the creation, production and distribution of products. A transformation that extends to marketing and how readers find, buy and interact with these new formats. Although these are parallel and important topics regarding the creation of digital content, this project focuses on the challenges that digital tablets bring to illustration in children's publishing, from an authors' point of view. The recent "Bologna Ragazzi Digital Award", attributed at the Bologna Children's Book Fair to the best apps for the young readers' market, signals the importance of this format to the future. Assuming this area as a prominent concern in the contemporary publishing world, the motivations for this work are the result of a personal interest combined with a prospect of enrichment and professional growth.

Regarding research methodologies, this project follows the proceedings proposed by qualitative research, a practice that allows research through different areas of knowledge given its method's flexibility and diversity, while privileging contemporary issues. The triangulation of the research methods and data collection ensures that analysis and interpretation doesn't confine to a single kind of observation [1]. Illustration, animation and new media limit the areas of this study, through literature review. Regarding data collection, it originates from selected bibliography and scientific publications, document analysis (case studies), interviews with animation, illustration and publishing professionals and studio work. We highlight the importance of interviews to this study, especially by illustrator and author André Letria, given his earned experience in digital publishing, establishing a direct relationship with this research project.

## 2 · Context

Books are one of illustration most common vehicles, a format with which we interact from an early age. Stories have always been used both for entertainment and children education. From the Egyptian visual art, the doctrine intentions of the Christian Church, to the romance illustrations from the thirteenth century, visual imagery has been a primary form of communication throughout many centuries. However, it is only with the acknowl-

edgment of children as a distinct age of human life that children literature emerges [2], with "Kunst und Lehrbüchlein" (1580) and "Orbis Pictus" (1658) being its first examples [3].

Edward Lear, John Tenniel, Kate Greenaway and Beatrix Potter are references of the nineteenth century, the period characterized as the "Golden Age" that introduced color, following the evolution of printmaking techniques. Randolph Caldecott represents one of the most important authors of this period, as the first illustrator to apply a symbolic interpretation to book illustration [4]. El Lissitzky's book "Of Two Squares", published in 1922, represents a break in traditional format and content addressing the symbolism of the abstract form [5]. In the 1950 and 1960 decades, graphic design strongly influences illustration, with the use of flat colors and a minimalist approach. Maurice Sendak innovates form and content, defining the picturebook as "visual poetry". With the late 1980s, typographic eclecticism appears, integrating text as part of the visual storytelling.

The evolution of the picturebook shows us its statute as a cultural artifact, reflecting technological, social, economical and cultural advances. The impact of the digital world in children's publishing has already been recognized by the "Radical Change" theory that identifies non-linear dynamics, multiple layers of meanings as well as format and perspective changes [6]. However, with the emergence of multi-touch tablets we are dealing with a fundamental transformation that is the introduction of a new medium.

### 2.1 · Between New and Old Media: A Cyclical Relationship

For more than five hundred years, since the fifteenth century, western culture has been dominated by the book, that established itself as a symbolic object [7], defined as "traditional media", a term used in association with different means of communication and organizations, such as the printed press or broadcasting. "New media" emerges as an inclusive concept regarding digital, electronic and interactive media. It represents a cultural change of paradigm and the blurring of boundaries: "we have seen a shift from «audiences» to «users», and from «consumers» to «producers»" [8]. Considering digital tablets as another form of digital



mediation, we here address the concept of new media in order to understand its relation to the traditional format.

To better understand the relation between new media and the existing culture, Bolter and Grusin defined the process of “Remediation” referring that “new media are doing exactly what their predecessors have done: presenting themselves as refashioned and improved versions of other media” [9]. For these authors no medium operates in isolation from other media, relating in contrast with the existing media. Henry Jenkins relies on the concept of “Convergence” to attain a similar conclusion: “If the digital revolution paradigm presumed that new media would displace old media, the emerging convergence paradigm assumes that old and new media will interact in ever more complex ways” [10]. As new media defy existing paradigms traditional media reaffirm their identity resorting to age as a symbolic meaning. We can see this in the publishing world, as book supporters call upon its historical legacy to proclaim a special status. These concepts allow us to attribute a cyclical rather than a linear relation between traditional media and new media, a relationship of dependency that strengthens the cultural identity of each medium.

## 2.2 · The Interactive Book

The referred cultural and technological processes also lead to a transformation of contents. Charlie Gere referred how the process of books digitization initiated by Google could alter readers relationship with the printed book: “What is almost certain is that it will not simply be a more convenient means of using books in way that we already do, but is likely to change how we conceive of books and their contents” [11]. Although we can define the book as an interactive format given the possibility of random access, its limit is always defined by its structure. On the other hand, virtual environments can carry narrative contents, but they will always be an interactive space.

Interactive media emerged with the convergence of computing technologies, audio and video in the same digital environment, in the end of the twentieth-century. There are many differences between a narrative object mediated by traditional media and the ones supported by new media, but interactivity lies in its core. Lev Manovich refers to this as “the myth of interactivity”:

“modern HCI allows the user to control the computer in real-time by manipulating information displayed in the screen. Once an object is represented in a computer, it automatically becomes interactive. Therefore, to call computer media «interactive» is meaningless – it simply means stating the most basic fact about computers” [12]. Interactivity is then defined as a cyclical process between two or more agents. Regarding human-machine relation it is based on the action of the subject on the artifact so that it becomes significant [13].

Although we recognize “interactivity” as a recent word, its meaning it’s not, as it is possible to find interactive structures that date back many centuries, such as the book itself. Chapter headings and indexes reflect the beginning of the input structure [14]. However, Erençan Gökçek points out that the definition of interactivity also represents a rhetorical approach to old media, that claims “that these weren’t really «active»”. Gökçek refers to Roland Barthes’ text “Death of the Author” where he claims that readers are actually writing it at the same time they engage with it [15]. Jeanne Stern, an animation teacher interviewed during this research project stated, regarding interactive animation, that “just because something is deemed “interactive” does not mean it necessarily requires more “interaction” from the viewer than regular animation. All good art should require an effort from the viewer, there should be space left open for the viewer to put oneself and one’s experiences into the art (using one’s mind)”.

## 2.3 · Multimedia and Narrative Structures

Being the digital environment, at its core, interactive, narratives conveyed through digital media are defined in the same way, which leads us to consider the concepts of linear and non-linear narratives. Non-linear narratives had a significant development with the advent of videogames placing users as an integral part of the narrative [14]. Some authors compare the non-linear and interactive possibilities that technologies enable with the function of the human brain. Anthony Friedmann refers how the brain processes different types of visual, sensory, auditory and tactile impressions on different points and how memories coexist through random access. Friedmann claims that despite our imagination working in a non-linear way, we did not always had the resources

and tools to make them interactive [14].

Regarding multimedia, as a way of conveying information through more than one type of media, it can be found in books, through the simultaneous presence of text and image [2]. Maria Nikolajeva affirms, in this sense, how books are closer to theater or cinema, where the overall meaning is constructed by the reader/viewer, through the interaction between the two forms of communication [2]. In this context, “Intermediality” emerges as a relatively recent concept, an area of investigation applied to artistic expressions that combine visual and verbal forms, such as cinema. Recently, this concept has also been applied in studies relating picturebooks [16].

The process of adapting the printed illustrated book to digital format further enhances these characteristics. The first digital picturebooks, a collection called “Living Books”, were published in the late 1980s, using the CD-ROM. This format rapidly declined, but new visual media brought image to the center of communication defying the written word [7]. However, all the educational processes leads us to think, read and write in the same way, a paradigm that is no longer present in images, graphics and animations, expressions possible to be “read” in multiple ways [14]. So, the digital book can be considered a dematerialized, interactive object that relies on the use of other media besides text [17]. The interactive possibilities of these formats enable the creation of new forms of communication and visual expression. The physical participation of the readers becomes fundamental, as a natural extension of game and recreation, basic human needs supporting learning processes.

### 3 · The project: “LOOP Stories” iPad app

As stated before, the emergence of tablets and e-readers represents a fundamental change in publishing relating the introduction of a new medium. Setting as reference picturebooks and children’s publishing, we here address the multi-touch tablet that emphasizes communication through images.

The research background of this study allowed us to sustain the choices regarding the project development. We’ve seen how this new digital paradigm brings important transformations to narrative structures, placing new challenges to the way we

approach digital publishing. Interactivity introduces a universe related to construction and experimentation. The priority given to image in this project meets this principle through the concept of a “story-image”, a vehicle of multiple meanings with which one interacts in order to enable a narrative construction. The “LOOP Stories” iPad app proposes a symbolic exercise that explores interpretation, defined by an open structure, random language, non-sense and memory, making a more direct appeal to imagination.

### 3.1 · Concept and Structure

“Visual literacy” is an expression commonly used relating the ability to “read” images, as contemporary culture becomes increasingly dependent on visual communication through multiple media [18]. This expression is also found in the context of picturebooks, as the ability of observation and aesthetic understanding of illustrations. Martin Salisbury argues that illustrations in children’s books can convey multiple meanings, playing a significant role in the development of children, rather than just being a simple aid to the act of reading [19].

Within this context, this project aims to explore the ability of attribution of meaning to images, relying on Maurice Sendak’s expression “visual poetry” as a metaphor for the project. We associate with another concept, the “Tangram” game where multiple pieces are used to construct different images. The app structure resembles a puzzle, where the different pieces are used to construct characters. For this first version of the app, fifteen different pieces were designed allowing thousands of different combinations. The title – LOOP Stories – suggests a never-ending story, simultaneously referring to the computer loop and to the origins of animation, when optical toys relied on this structure as a narrative language.

### 3.2 · Visual and Graphical Composition

The illustrations are based on a symbolic approach that starts from the idea of the “pixel” as the basis for its construction, referring to the digital environment in which they operate. The aesthetics is defined by a geometric and orthogonal design, which resorts only to the perpendicularity between lines for solving the formal

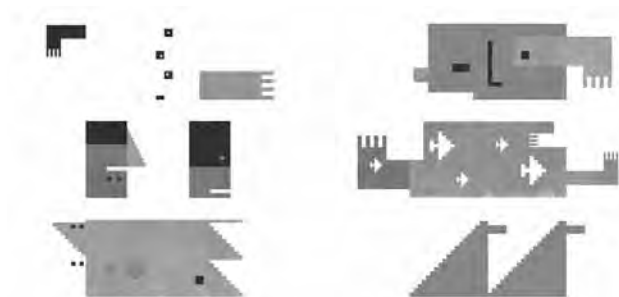
vocabulary, based on the square module. The images rely on simple geometric shapes – circles, triangles, and squares – towards a degree of geometric abstraction that encourages free interpretation. The simplicity of the base elements when combined together, suggest, however, more complex readings. This complexity is further enhanced by the use of bold and flat colors with contrasts that enhance the expressiveness of the illustrations.

### 3.3 · Prototype Development

Prototypes help to consolidate a project in a concrete object through the evaluation of several items such as functionality, navigation, interaction, or even the translation of the illustrations on the screen. Prototypes can be developed in different phases, corresponding to its level of development. The information attained from the evaluation constitutes the basis for its future development. The aim of this prototype was not to include all the information and structure of the application, but to ensure that the model reproduced the actual app experience. With users tests, the goal was to understand if they clearly identified and used the functions of the application.

Tests were conducted using a group of 12 users aged between 10 and 60 years old, some of them knowledgeable with iPad technology, others using it for the first time. After a short learning process, quickly the interaction reveals to be immediate and natural. The objectives are easily understood by users of different ages. We consider relevant that this project fits into a universe of products that are still quite new in the market, which naturally raises curiosity. Still, some suggestions and comments were made to the author of the project: Why is the scroll bar positioned on the

F1. Illustrated pieces of the project.



left side? Will there be additional functionalities? Do you consider including levels of complexity, relating different age levels?

We also consulted a director of a Portuguese publishing company for an evaluation of the project according to an editorial perspective. Considering it a simple exercise, Margarida Noronha (from Kalandraka Portugal) stated that the app might appeal to different age groups given the mental exercise it evokes “a younger child may experiment without making connections while older children can play from memory”.

### 4 · Conclusion

Digital publishing is an increasing reality. However, the impact of digital media in the publishing circuit is still at an early stage of assertion. The fact that this is an emerging field brings with it the lack of established bibliographical references, the solid results of an historical distance that allows clear and objective information. Therefore, it is important to assume a critical posture through conscious choices and methodologies, based on knowledge supported by the technological possibilities of this medium.

The app prototype represents an important phase of this research process that simultaneously places it in a further development phase. Some issues are still to be tested, such as additional screen views, the inclusion of sound and the animated elements that should be evaluated in relation to the whole structure of the application. To review these, future tests will be necessary using a prototype version closer to the final product. However, this project already represents an intense learning process, essential for its future development.

Interactivity, sound and moving image are languages that influence the creation of digital books, different expressions that can engage with each other. The illustrator may not dominate all of them, but the knowledge of their expressions and the relationship with different professionals reveals to be crucial for the development of unique products. If the picturebook is considered by many authors as an ideal means of artistic expression, so the approach to an interactive project should be the reflection of an artistic nature, experimenting with formats and established conventions, challenging the reader and reflecting technological advances.



F2. Photos of the prototype being tested.

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# O PAPEL DO ILUSTRADOR NA CRIAÇÃO DE ÁLBUNS ILUSTRADOS ELETRÓNICOS



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## Abstract

O papel criativo dos autores na conceção de conteúdos para publicações eletrónicas de álbuns ilustrados tem sido preterido pelo papel de programador, já que na tentativa de explorar o mercado editorial online as editoras tendem a recriar o seu portefólio impresso no mundo das publicações virtuais[1] . Esta preferência tem como consequência a criação de conteúdos que ignoram as diferenças da manipulação e experiência de leitura que os diferentes tipos de publicação permitem. Devem os álbuns ilustrados eletrónicos libertar-se das ligações ao código tradicional, permitindo que se legitimem enquanto objetos autónomos, assumindo as suas próprias regras de leitura? Qual o papel do ilustrador neste processo?

## Keywords

álbum ilustrado eletrónico,  
e-book, ilustrador

## Objetivos

Procurando responder a estas questões pretende-se com este trabalho estabelecer um mapeamento do atual cenário da edição de álbuns ilustrados eletrónicos, no contexto nacional e internacional. Pretende-se também perceber o enquadramento do ilustrador na criação destes artefactos, assim como entender a pertinência da colaboração de equipas multidisciplinares que incluam agentes criativos e agentes técnicos no desenvolvimento de conteúdos pensados exclusivamente para a leitura em dispositivos eletrónicos.

## Introdução

O álbum ilustrado é uma publicação onde texto e imagem coabitam no espaço do livro. Este tipo de publicação geralmente associada ao universo infantil, conta uma história que tanto pode ser lida pelo texto escrito, como pelas ilustrações que o acompanham. Não existe um modelo para a criação de álbuns ilustrados, no entanto, segundo Linden[2] existem polos que os ajudam a categorizar. Estes polos são definidos pelo grau de cumplicidade entre texto e imagem no espaço da página, da dupla página e da relação entre as páginas dentro do próprio livro. Ou seja, quando o texto ocupa uma página e a imagem ocupa outra, estamos de acordo com Linden “visualmente, no mais alto grau de separação entre texto e imagem.” No outro extremo encontram-se os álbuns cuja imagem e texto se fundem na página ou dupla página, criando uma experiência de leitura “próximos da leitura multimídia” já que permite que o leitor possa simultaneamente ler a narrativa visual enquanto lê o texto, perdendo-se se quiser em pequenas narrativas paralelas que acontecem no plano da imagem, e retomando em seguida ao texto.

O papel do ilustrador na criação deste tipo de conteúdos está, portanto, dependente de condicionantes de ordem técnica que têm de ser consideradas. Estas limitações estão diretamente relacionadas com a natureza física do livro e da mecânica da sua produção e manipulação. O formato do álbum, o tipo de papel e o tipo de impressão por exemplo, são fatores que influenciam o resultado do produto final.

De acordo com as normas culturais o livro será manipulado de uma determinada forma. Mas o ilustrador, consciente dos proto-

colos de leitura ocidentais e da operacionalidade do códice está em condições de criar uma narrativa visual que pode ser lida de uma forma linear, mesmo sem a inclusão de texto ou numeração de páginas. Esta consciencialização pode ser também aproveitada para criação de ilustrações que tirem proveito das características físicas do livro. Exemplo disso é o livro “The Rocket Book” (1912) de Peter Newell, onde um buraco que atravessa o interior do livro, funciona tanto como elemento gráfico, como elemento de ligação entre as páginas ilustradas e de texto.

## O álbum ilustrado eletrónico

Em 2010, com o surgimento do iPad, a editora Atomic Antelope lançou o livro eletrónico “Alice in Wonderland” na loja iTunes. Esta publicação chamou a atenção para o iPad enquanto plataforma de leitura de álbuns ilustrados, já que permitia uma experiência de manuseamento diferente da dos livros impressos. O leitor foi confrontado com as possibilidades de interagir com os elementos gráficos do livro, não só utilizando o dedo como forma de manipular as ilustrações e mudar a página, como através de movimentos espaciais do próprio dispositivo. Esta publicação, pelo seu sucesso comercial, criou também grande curiosidade nas editoras que passaram a ver este tipo de publicações como algo em que deviam apostar. Na tentativa de explorar este mercado, algumas editoras transformaram em publicações eletrónicas alguns dos títulos que faziam parte do seu catálogo de livros impressos.

Mas será que a criação de álbuns ilustrados eletrónicos para dispositivos como o iPad deve ser meramente uma adaptação para o formato digital de publicações impressas?

Moira Butterfield 2012 [3] chama a atenção para o fato de as editoras estarem a substituir o papel dos ilustradores pelo de programadores, e que não existe uma preocupação em criar publicações inovadoras que aproveitem as potencialidades dos dispositivos de leitura e acrescenta “I think we should get into the mix and offer our creativity”. Em resposta ao seu artigo, Kate Wilson, managing director of British company Nosy Crow, referiu que estaria interessada em trabalhar com autores que estivessem dispostos a criar álbuns ilustrados eletrónicos sublinhando a diferença entre a criação deste tipo de conteúdos e de álbuns ilustrados impressos. Ao enumerar algumas razões que as distinguem,

Wilson considera que o processo de criação de álbuns ilustrados eletrónicos é um processo muito mais dependente da colaboração entre todos os intervenientes, comparando-o mais ao processo da produção de um filme do que à produção de um álbum ilustrado impresso.

Esta discussão começa a fornecer-nos pistas acerca do papel do ilustrador na criação destes conteúdos. Ao ilustrador é exigido uma maior versatilidade e um domínio técnico que lhe permita preparar as ilustrações para outro tipo de interações que os dispositivos de leitura eletrónicos permitem. O ilustrador está portanto dependente de fatores mais abrangentes do que o formato do livro ou o tipo de papel em que este vai ser impresso. Se antes o tamanho do livro era contabilizado pelo número de páginas, agora é contabilizado pelo espaço que ocupa no disco e pela fluidez de leitura que o loading das páginas permite.

O estúdio de design Ustwo, responsável pelo lançamento do álbum ilustrado eletrónico “Nursery Rhymes with Story Time” (2011) lançou uma segunda publicação “Papercut” (2012) em que decidiram explorar as possibilidades da publicação eletrónica. Num artigo de Stuart Ledge [4], Matt Mills cofundador da Ustwo, fala do que o motivou a criar a publicação e do processo de trabalho que a envolveu. O Papercut é uma compilação de três histórias curtas, que à medida que são lidas vão despoletando conteúdo multimédia interativo, construindo um ambiente visual em torno da experiência de leitura. Mills assume que o principal objetivo foi experimentar a possibilidade de contar histórias de uma nova maneira. Uma das características que se evidencia é o facto da leitura ser feita através do scroll em vez do tradicional virar de página. Fará sentido virar páginas num objeto como o iPad? São estas perguntas que vão abrir caminhos para que se pensem em abordagens alternativas de leitura. Mills admite também que o leitor poderá ficar confuso quando confrontado com novas regras de leitura que desafiam as suas expectativas acerca do objeto livro e o seu funcionamento, mas só através da experimentação e exploração se poderão encontrar alternativas pertinentes. “We need to push the envelope” afirma Mills. Em relação ao processo, Mills fala também na importância do trabalho colaborativo necessário para a criação de um objeto desta natureza. “an author working with sound designers, musicians and user experience designers.

That’s one reason Ustwo wanted authors to write stories specifically for Papercut, rather than simply whack in a collection of existing stories.”

No mesmo artigo, Jonas Lennermo responsável pela componente logística de Papercut, mostra-se espantado com a quantidade de conteúdo multimédia absorvida pela publicação e tal como Wilson, compara-a à produção de um filme, afirmando que existem de um lado os filmes e do outro os livros impressos, e que este tipo de publicações são um novo género que paira entre os dois.

Em Portugal, André Letria através da editora Pato Lógico associada à Biodroid Entertainment publicou três títulos. Estas publicações embora criadas a partir de uma versão impressa, acabam por não estar dependentes de um código herdado do livro, já que a própria versão impressa se esforça por o manipular. Isto aconteceu também porque para além de existir uma intenção de os publicar em formato digital, Letria tinha também a noção de que não fazia sentido transpor o livro que existe no formato impresso para o formato digital. Esta preocupação do ilustrador em conceber de origem um produto que iria funcionar em dispositivos eletrónicos, resultou em álbuns ilustrados que acabam por aproveitar grande parte das potencialidades de leitura oferecidas. Mas pensar o livro para esta realidade não foi o suficiente para se alcançar um produto funcional. No caso da criação do álbum ilustrado eletrónico “O Incómodo” Letria [5] considera que “O processo criativo assenta numa grande sintonia entre mim [André Letria] e o Tiago Ribeiro que contribui também com toda a sua experiência na produção de jogos e outro tipo de conteúdos digitais.” e acrescenta ter sido “necessária a adaptação de algumas cenas e um processo de aprendizagem diária por se tratar de uma experiência de alguma forma inovadora”

André Roquette [6], ilustrador do álbum “Alice e André no Universo das Maravilhas” (2011) realça, que inicialmente estava prevista a publicação do álbum em versão impressa, mas que acabou por ser publicada diretamente em versão eletrónica. Esta alteração implicou a adaptação das ilustrações ao formato e a preparação dos layers sujeitos à animação. Quando questionado se considerava que o resultado teria sido diferente se tivesse pensado de início nas ilustrações para o formato digital, a resposta

foi perentória: “Sim. Acho que tem de se pensar de uma maneira diferente. Cada suporte tem regras e limitações diferentes e só assim se consegue atingir o potencial de cada suporte.” E concluiu “o iPad permite um tipo de narrativa diferente do tradicional que não precisa de ser um típico página a página.”

Esta última afirmação remete-nos para outra característica que pode ser tida em consideração: a possibilidade de abrir a narrativa para além da narrativa linear.

O álbum ilustrado impresso “O cavaleiro coragem” (2011) de Delphine Chedru, é um exemplo de como também as convenções de leitura podem ser alteradas. Durante a leitura do álbum, o leitor tem de optar por um determinado caminho, retomando a leitura na página indicada que corresponde à escolha da ação. Este tipo de narrativa não linear pode fazer parte do leque de opções dos autores do álbum ilustrado eletrónico, já que esta característica se adapta perfeitamente às potencialidades oferecidas pelos dispositivos de leitura. Quando estamos a ler um livro impresso, sabemos que fisicamente a página seguinte tem um texto escrito, e este não vai modificar se escolhermos que o personagem vire à direita ou à esquerda no labirinto. No entanto, se estivermos a ler um álbum ilustrado eletrónico, temos a possibilidade de decidir o texto da página seguinte, porque elas não estão ordenadas num vetor de leitura fixo. Nas publicações de André Letria “Estrambólicos” e “De Caras” a leitura tem também uma componente interativa, permitindo ao leitor manipular diferentes partes dos personagens conseguindo em cada uma das publicações 4096 combinações diferentes, cada uma delas com uma identidade própria.

## O papel do Ilustrador

Consideramos então que os álbuns ilustrados eletrónicos podem ser divididos em dois grupos que se caracterizam pela sua génese. Num primeiro grupo temos os álbuns que fizeram a sua transição do universo do álbum impresso para o digital. Inseridos num segundo grupo, estão aqueles que são criados de raiz para serem lidos em dispositivos eletrónicos. Embora tenham o objetivo em comum da criação de um álbum ilustrado eletrónico, consideramos que as metodologias para a sua criação se distinguem nos dois grupos, nomeadamente no que diz respeito ao papel do ilustrador. Pelos exemplos que temos observado no decorrer desta investi-

gação, os álbuns do primeiro grupo são uma abordagem inicial das editoras ao universo da publicação eletrónica. Nestes casos, a tarefa de transportar o livro para um formato digital assume uma maior importância, passando para um plano de destaque o papel de uma equipa dedicada ao *user experience design*<sup>1</sup>. A ilustração foi criada anteriormente com outras preocupações, muito mais relacionadas com a criação da narrativa visual. O ilustrador pode ser solicitado a adaptar as ilustrações ao novo formato ou a prepará-las para eventuais animações, sendo a sua participação essencialmente relacionada com os aspetos técnicos.

Quando se tratam de álbuns criados desde o início para leitura exclusiva em dispositivos eletrónicos, o ilustrador deverá ter um papel mais ativo, já que participa na sua criação desde o início, para esse formato específico. A criação de um álbum ilustrado desta natureza está dependente de uma equipa multidisciplinar que inclui agentes criativos e técnicos como já vimos anteriormente. De acordo com Neil MacFarland [7] a obtenção de um produto de sucesso nesta área, está dependente do input de todos os intervenientes no processo da sua criação. Esta consideração tem sido comum em todas as opiniões e documentação recolhidas ao longo desta investigação, contribuindo para uma definição do papel do ilustrador e de metodologias de trabalho para a criação de narrativas visuais para álbuns ilustrados eletrónicos.

## Conclusões

O caminho para a elaboração de um álbum ilustrado eletrónico capaz de retirar o máximo partido dos dispositivos eletrónicos de leitura, passa pelo esforço colaborativo de uma equipa multidisciplinar. Consideramos ainda que o trabalho do ilustrador não deve ficar pela criação de elementos visuais e da sua adaptação às possibilidades multimédia que um objeto como o iPad permite explorar. Assim, e devido ao fato de esta ser uma área relativamente recente, cujo estudo ainda é pouco desenvolvido, verificou-se, através da literatura consultada e de entrevistas pessoais que o papel do ilustrador passa também por estar atento ao universo das publicações eletrónicas e contribuir ele próprio sempre que possível com abordagens experimentais da ilustração e formas alternativas de pensar a leitura de álbuns ilustrados eletrónicos.

<sup>1</sup>. Trata-se de um conjunto de disciplinas dedicadas ao estudo da interação do usuário com um sistema interativo. A finalidade é a criação de um interface intuitivo e de fácil utilização.



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# O LIVRO ILUSTRADO DIGITAL E O LIVRO ILUSTRADO IMPRESSO

Possibilidades de transição



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## Abstract

O presente estudo tem como objecto central o livro ilustrado e tem como objectivo principal compreender as diferenças entre dois modelos: o livro impresso e o livro digital.

Partindo de um objecto de estudo concreto, um livro tradicional em formato impresso desenvolvido na disciplina de Ilustração no contexto do Mestrado de Ilustração e Animação do Instituto Politécnico do Cávado e do Ave, é nosso objectivo perceber as principais diferenças que ocorrem na transição para um suporte digital, especificamente num formato iPad, assim como enunciar algumas das metodologias possíveis para que esta transição seja eficaz.

Num momento de transição como o que vivemos actualmente, em que o ilustrador tem cada vez mais necessidade de se adaptar a novos meios, novas ferramentas de trabalho e novas formas de comunicação, importa reflectir sobre a natureza do livro e sobre as características que distinguem os dois suportes, o tradicional e o digital. Assim, é nossa intenção perceber essas diferenças e enunciar alguns dos procedimentos que o ilustrador deve ter em conta quando experimenta a transição de um objecto de ilustração para um meio digital táctil como é o iPad.

## Keywords

Livro, ilustração, interação, transição digital.

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## 1 · Introduction

A presente investigação tem como finalidade, conhecer e compreender as possibilidades de transição entre a ilustração do livro ilustrado impresso para livro ilustrado no suporte iPad.

Este projecto é resultado de um trabalho de investigação elaborado no âmbito do Mestrado em Ilustração e Animação na Escola Superior de Tecnologia do Instituto Politécnico do Cávado e do Ave.

Num contexto histórico válido até há bem pouco tempo, o livro e respectiva edição relacionavam-se diretamente com a produção em série de materiais impressos. É o que chamamos de livro tradicional impresso. Actualmente a reflexão sobre o livro tal como o conhecíamos até aqui, tem vindo a sofrer profundas transformações muito em parte devido ao crescente desenvolvimento das novas tecnologias.

Segundo Hanna Tatila Gonçalves (2010), foi em meados do séc. XVIII que se publicaram os primeiros livros ilustrados para o público infantil, pela mão de dois editores londrinos, Thomas Boreman e John Newberry. Estes livros, pela inovação que trouxeram ao reunirem num só objecto a combinação de imagem e texto, tornaram-se nos antepassados dos livros ilustrados actuais. A origem do livro ilustrado no formato em que hoje é mais usual, com igual ou maior preponderância da imagem em relação ao texto (actualmente também denominado de álbum ilustrado), é oriunda do século XX. Tendo como referência o artigo de Tamara Abreu intitulado “Monteiro Lobato e Paul Faucher: uma história comparada do livro infantil”, foi nos anos vinte e trinta que se começou a discutir a aprendizagem e os métodos de ensino para as crianças. É nesta altura que surge e se desenvolve o movimento Escola Nova (movimento de renovação do ensino, que surgiu na Europa e na América do Norte no final do século XIX e que teve o seu apogeu na primeira metade do século XX), cujo objectivo consistia na criação de actividades didácticas direccionadas para crianças e que tinham por objectivo incentivar a sua participação de forma mais activa no processo de educação, uma vez que os valores deste movimento assentavam em valores como defesa da igualdade dos direitos humanos e o direito à educação para todos. “A concomitância entre o desenvolvimento das teorias educacionais surgidas no século XIX — que deram origem ao movimento

da Escola Nova no século posterior — e o aparecimento de uma literatura moderna para crianças não nos deixa dúvidas a respeito da indissociabilidade entre estas duas faces da história do livro infantil” (Tâmara Abreu, pág 39).

Nos anos 20 o educador francês Paul Faucher torna-se o fundador da coleção de literatura infantil Père Castor figura fundamental e pioneiro da Nova Educação. O seu trabalho destaca-se como editor na área infantil bem como na procura de novas estratégias/métodos de educação/ensino através de meios educativos inovadores, que se baseassem em instrumentos e/ou materiais que de alguma forma estimulassem a aprendizagem, o ensino e o desenvolvimento da criança. Dentro deste conceito, referimos a colecção “Albums du Père Castor” de 1930, o seu primeiro álbum que surge como um símbolo de um programa construtivo, onde a ilustração ganha destaque e maior espaço de acção.



“A partir deste novo olhar da sociedade em relação ao seu mais novo integrante (a criança), surgem novas formas de interagir com ela, de educá-la; surge uma nova linguagem que determina uma nova comunicação através da criação artística, mais precisamente da literatura infantil (...) Não por acaso a literatura para crianças e jovens entra na sua fase de maturidade de braços dados com o desabrochar da imagem para as mídias culturais, sejam elas impressas ou não-impressas — livros, jornais, revistas, cinema, televisão — na sociedade do Pós-Guerra...”. (Tâmara Abreu, pág.43).

É nesta fase de maturidade que a imagem passa a adoptar uma posição de “privilégio da imagem sobre o texto” (Tâmara Abreu, pág.44) e se torna um novo método de ensino e aprendizagem descendente da colecção “Albums du Père Castor” por Paul Faucher

**F1,2.** À esquerda Paris, Flammarion, “Albums du Père Castor” (1931), editado por Paul Faucher. À direita Ilustração de capa do livro de Paul Faucher: função pedagógica de leitura. Paris: Flammarion (1932).

e segundo a ideologia da Escola Nova.

Faucher surge como um importante explorador do ensino infantil reunindo e trazendo pela primeira vez para a educação uma série de novas formas e características de ensino. Hanna Tatila Gonçalves refere algumas delas: ênfase no suporte material: (textos curtos, ricos em imagens, desenhos simples, cores fortes, graficamente moderno), o convite a agir (através de narrativas em imagens, jogos para montar, danças, música, recorte, colagem e pintura), tendo em conta que “os livros variavam muito na forma/função: álbum ilustrado, livro-jogo, atividades manuais, recorte, colagem, pintura, música, dança, origami, etc.” Estes albúms eram criados em equipa e orientados por Paul Faucher onde diversos autores, ilustradores, professores e artistas plásticos participavam. Numa pequena contextualização histórica, tendo como base de estudo e pesquisa o artigo “Livros de imagem: três artistas narram seus processos de criação” de Hanna Talita Gonçalves (2010), podemos afirmar que os anos setenta e oitenta foram períodos marcados pela forte produção de livros infantis, muito em parte, devido a incentivos do estado às editoras e que em muito contribuíram para a produção e expansão da literatura infantil.

Com o passar dos anos estes livros ilustrados evoluíram para outras formas e sofreram alterações, nomeadamente nas suas soluções de design, na concepção gráfica das suas formas, no uso de materiais diferentes e na relação entre imagens e textos. Bruno Munari é exemplo de como a procura, o interesse e a preocupação pela interactividade ajudaram e contribuíram para a evolução do livro interactivo tal como hoje o conhecemos. Nascido em Milão em 1907, artista e designer, destacou-se sobretudo nas áreas da arte, do design e da escrita no séc.XX. No seu trabalho destacamos a sua multifacetada pesquisa na área infantil procurando através do jogo, criar ritmo e interactividade nos vários livros infantis que criou. No final dos anos 40, Bruno Munari torna-se um exemplo importante de inovação no livro infantil através dos projectos variados que nos elevam para um campo multi-sensorial de interacção entre público e obra, como podemos comprovar, por exemplo, no livro “The Elephant’s Wish” de 1945.

Tal como Bruno Munari, também a ilustradora Květa Pacovská (nascida em 1928), direccionou o seu trabalho para objectos interactivos e sensitivos através do uso de acabamentos gráficos

diferentes (como vernizes, cores especiais e cortantes) elevando, assim, a experiência a interactividade entre o objecto e o leitor. “The Little Flower King” (2007), é um dos muitos livros que desenvolveu sobre esta perspectiva da interacção, onde a criança, é convidada a personalizar as suas próprias personagens. Sobre este livro a autora refere: “... uma recuperação de memórias da minha infância, quando era comum a livros que permitem a criança modificar as figuras” (entrevista com Philip Stanton, para a revista CLIJ Magazine).

Hoje assistimos ao crescimento dinâmico dos meios digitais, onde, partindo do objecto livro, surgem novos conceitos, novas funções e novas práticas de leitura, que, por sua vez, dão origem a um novo e ainda recente processo de trabalho, baseado na preparação de conteúdos para formatos digitais.

E é, no momento actual, de transformação e adequação, onde surgem novos processos e novas metodologias que enquadrámos a nossa investigação, (isto é,) sobre os mecanismos necessários para adaptar essas diferenças ao novo suporte digital, o iPad. Só conhecendo essas diferenças entre o livro impresso e o livro para iPad se torna possível uma transição bem sucedida.

Assim, tendo como principal interesse a ilustração, partimos de um livro impresso tradicional desenvolvido na unidade curricular de Ilustração I. Através deste livro fizemos uma primeira experiência em ambiente digital que serviu para ensaiar algumas das metodologias essenciais que ocorrem na transição de um mesmo objecto de ilustração para o suporte iPad. Esta acção permitiu-nos compreender melhor as inúmeras possibilidades formais oferecidas pelo novo meio e perceber a importância da adaptação/preparação de um trabalho de ilustração para este novo contexto.

## **2 · Do suporte tradicional ao suporte tecnológico: o que os distingue.**

Para compreender melhor de que forma o ilustrador pode/deve preparar as suas ilustrações neste processo de transição entre suportes, será necessário primeiro, referenciar e elencar algumas das diferenças que existem entre eles.

Segundo José Afonso Furtado (2006), a metáfora do livro é discutida a partir de dois conceitos. O primeiro é referente

a um conjunto de conotações que se traduzem em expressões que advêm da “cultura do livro” tais como: “(...) livro impresso, tradição tipográfica ou gutenberguiana, textualidade, linearidade, abstracção, raciocínio, dedutivo, monoalidade, contexto fechado.” Um segundo conceito advém da cultura proporcionada pela multimédia e pelas novas tecnologias em conceitos como “(...) multimedialidade, hipertextualidade, hipermídia, multilinearidade, imersão, raciocínio analógico ou contexto aberto.”

Para António Fidalgo (2002) “a folha de papel, primeiro manuscrita e depois impressa, foi de alguma maneira, o primeiro ecrã a dar conta de gente e terras longínquas, dos seus costumes, dos feitos e das palavras, da sua filosofia, história, cultura, religião.” No contexto deste trabalho o conceito de folha do livro enquanto ecrã faz todo o sentido e revela a pluralidade de significados do livro actual.

O acesso global à informação trouxe, entre muitas outras coisas, a oscilação de compra e venda de produtos gerada por um mercado de tendências que por sua vez, deram lugar a novas formas de estar e, no caso particular do livro, a novas formas de ler e contar histórias através de um novo objeto, com uma nova forma e estatuto.

Mas essas alterações acontecem não só a nível físico, na forma em que o livro se materializa, mas também na forma como ele é feito enquanto processo. Falando apenas nos momentos que precedem a elaboração intelectual do livro (os conteúdos), a execução técnica nos dois formatos têm tempos e processos distintos. O livro impresso é construído a partir de um conjunto de mecanismos demorados dos quais fazem parte, por exemplo, a impressão e a encadernação. Um livro em formato digital suprime essas operações. O seu objectivo final é ser visto em ecrã. Como forma de melhor esclarecer sobre o tipo de livro em causa neste estudo, será necessário compreender, primeiro, alguns dos conceitos inerentes, como por exemplo, em que consiste um e-book.

O e-book deriva do termo inglês *eletronic book*, ou seja, um livro em formato digital. Este suporte, do livro digital, caracteriza-se pelo uso de texto e imagem numa só aplicação, maioritariamente texto, e é muito usado como objecto de leitura, em forma de texto corrido. A origem destes conteúdos escritos é diversa.

Muitos deles derivam de livros já anteriormente impressos. Noutros casos a informação é completamente nova e escrita especificamente para o formato digital.

O e-book, assim como o PDF (Portable Document Format), o HTML, o ePub (eletronic publication), entre outros, pertence à categoria dos formatos digitais, formatos estes que podem ser lidos em diferentes suportes específicos tais como os PDAs (Personal digital assistant), os iPad, os Smartphone, etc. No entanto, o tipo de livro que avaliaremos neste estudo não se enquadra totalmente neste formato, uma vez que, nos e-books, na maioria dos casos, é evidente a ausência de som, imagem e animação, e um reduzido grau de interactividade, existente unicamente na acção que permite o virar de página.

Para Angela Lago, escritora e ilustradora brasileira conforme refere no seu blogue, “... o e-book repete o conservadorismo dos incunábulo, os primeiros livros impressos. Em vez de tirar partido das novas possibilidades da impressão, os incunábulo tratavam de imitar os livros manuscritos.” A partir desta afirmação a autora compara o e-book em diversos aspectos ao livro impresso, uma vez que, de uma forma geral, o e-book apresenta a mesma informação previamente existente nos livros impressos, com a diferença de que, em vez do papel, faz uso de um ecrã. Para a mesma autora existem outras características que aproximam os dois suportes tais como: o formato, onde em certos casos a folha continua a tomar a orientação vertical ou horizontal circunscrita à página rectangular; a aparência onde o fundo branco prevalece sobre o texto corrido; o peso e o gesto da passagem de folhas; etc. Por outro lado, uma das principais diferenças em relação ao livro tradicional está no processo em si, na possibilidade de conter informação veiculada a baixo custo e, implicitamente, uma distribuição do produto mais fácil e abrangente distribuição. A autora refere que o formato e-book não tira proveito das capacidades interactivas que um formato digital pode fornecer, tal como a animação, o som, o toque dinâmico sobre imagens etc e neste seguimento refere: “Mas para que ganhe vida própria ele precisa ainda explorar as potencialidades da mídia.”

Depois de compreender o formato e-book será agora necessário distingui-lo de uma aplicação. Também conhecidas pela abreviatura app, as aplicações derivam do termo inglês ap-

plication. As aplicações instaladas e constantemente actualizadas em telemóveis e tablets, têm como principais funções possibilitar o acesso directo a serviços de notícias, informação meteorológica, jogos, serviços de mapas com geo-localização através de GPS ou utilitários dos mais variados tipos e finalidades. As aplicações distinguem-se do formato e-book sobretudo pela dinâmica interactiva propiciada entre utilizador e suporte tecnológico. Por um lado o formato e-book transporta texto corrido como principal função, enquanto que as aplicações surgem com inúmeras possibilidades e funções de escolha para o utilizador. Tal como o e-book, através de uma app, é possível contar e ler uma história. No entanto a história será lida e contada de forma diferente. Tal acontece porque muitas vezes as aplicações possibilitam uma série de funções complementares tais como a gravação de voz, a usabilidade do aparelho através do toque no ecrã com os dedos, movendo e dispoando acções animadas sobre ilustrações enquanto nesse mesmo instante, a narrativa é acompanhada por sons e personagens animadas.

Este formato já coloca o leitor, que agora também passa a ser um utilizador, pelo grau de participação que adquire na leitura da aplicação, numa posição mais activa. A nova experiência de leitura torna-se alargada pela introdução de outras características e meios como o toque, o som, a animação e a utilização da imagem de forma mais sistemática.

Ainda relativamente às diferenças existentes entre o suporte impresso e o suporte digital, a questão da distribuição é também diferente. O livro impresso pressupõe a distribuição em vários espaços físicos, as livrarias, o que implica o transporte e o armazenamento dos mesmos. Por sua vez um livro em formato iPad, existe enquanto aplicação, uma forma que é virtual e, como tal, não ocupa espaço físico e torna as operações de compra mais céleres. O leitor tem a oportunidade de comprar a aplicação pela internet sem sair de casa e consegue obter o produto num curto espaço de tempo após a sua concepção.

Não encontramos nestas diferenças um meio melhor que outro. Cada um tem o seu espaço. Se o livro digital beneficia da rapidez e comodidade de aquisição, o livro impresso tem, por exemplo, o cheiro do papel e da tinta impressa sobre as folhas, a experiência de manusear as páginas e todo um conjunto de

sensações que o iPad não possibilita. Mas, por sua vez, o iPad proporciona outras sensações, como é o caso da imagem, que agora pode também ser animada, assim como e a existência do som, do movimento, do tacto, etc.

### 3 · Conhecer o novo suporte e possibilitar a transição

Tendo em conta que nos dias de hoje são milhares as aplicações que se encontram à venda para dispositivos móveis, o ilustrador tem um importante papel na criação de aplicações apelativas que consigam captar a atenção do seu público alvo.

Estas formas de “seduzir” o utilizador, passam por características como a qualidade da linguagem plástica, o uso e apropriação das diferentes formas de interatividade que aparelho tecnológico permite e que originam novos conceitos de utilização e novas formas de interligação entre conteúdos. Essa interligação possibilita a hipernarrativa, característica que o suporte - livro - tradicional não possui, pelo menos desta forma tão fluída e imediata. Assim, sempre que o ilustrador desenvolve um livro para um suporte como o iPad deve ter em conta a existência destas novas funções como é o som, a animação e a interação, ferramentas fundamentais para dinamizar a nova narrativa visual e assim trabalhar o novo suporte na sua forma mais completa.

Chris Stevens (2011), autor do livro “Designing for the iPad” e criador da aplicação “Alice in Wonderland”, afirma que existem 3 factores importantes a ter em conta para o desenvolvimento de uma aplicação: funcionalidades, características e opções. As funcionalidades encontram-se ligadas à capacidade e à forma como as ilustrações, as animações e as narrativas têm de se ligarem entre si e se adaptarem às características do aparelho, características essas proporcionadas por inputs e outputs relativos às capacidades oferecidas pelo o iPad através da sua tecnologia e que iremos especificar mais adiante. A narrativa textual juntamente com a narrativa visual, deve funcionar em conjunto com as potencialidades que o iPad fornece, de modo a proporcionar ao utilizador uma experiência agradável, interativa e que comunique o pretendido da melhor forma. Relativamente às opções mencionadas, consistem exactamente no poder de escolha do utilizador. Seguem-se algumas das características possibilitadas pelo objecto: toque/

touch (com um ou vários dedos); arrastar/drag; agitar/shake; inclinar/tilt; girar/spin; rodar/ rotate; voz (o iPad tem embutido um microfone que possibilita o uso do sopro como forma de interação pelo utilizador); audio; zoom/pintch (com dois dedos aproximar ou afastar). Existem ainda outras funções que dependem de outros mecanismos tecnológicos inserido no próprio iPad, como é o GPS, que permite o reconhecimento da posição geográfica do dispositivo; o sensor de luz que permite o reconhecimento de luz ambiente; reconhecimento da posição x,y,z que possibilitam ao iPad reagir ao movimento, quando é impulsionado, rodado, agitado, etc. Assim que detecta o movimento, o ecrã muda de orientação e ajusta a visualização à posição do objecto, ou seja, em qualquer posição que o suporte esteja, adapta-se à forma certa de ver ou ler o seu conteúdo. Isto quer dizer que o usuário pode manusear o iPad e fazer uso da rotação do suporte de forma a conseguir o formato que melhor se ajuste à sua posição, tirando o melhor partido possível do uso do ecrã.

A função de rotação também é comum ser usada para mover objetos ou personagens, como encontramos, por exemplo em aplicações como “Alice in Wonderland”, desenvolvida pela empresa Atomic Antelope, “Timo and the Magical Picture Book” escrito por Rian Visser e ilustrado por Klaas Verplancke ou ainda “The Fantastic Flying Books of Mr. Morris Lessmore” de William Joyce, entre outros. Estes exemplos enunciados são também alguns dos mais atuais que se destacam não só pela qualidade da ilustração, como pelo grau de interação que proporcionam ao utilizador.

Com o crescente desenvolvimento tecnológico e as novas possibilidades oferecidas pelo iPad, várias são as narrativas em formato tradicional de livro que sofreram adaptações e evoluíram para um formato de aplicação, como é exemplo “Heart and the Bottle” de Oliver Jeffers que, após uma versão impressa no ano de 2010, adoptou também a forma digital interativa para iPad em 2011. Este é um exemplo de um livro que inicialmente foi pensado apenas com o intuito de ser impresso e mais tarde foi adaptado para iPad, o que exigiu não apenas uma transferência das ilustrações do livro impresso, mas antes uma adaptação ao novo formato através da introdução de novas funções como o som, a animação e a interacção. Neste caso, a adaptação para o meio iPad, possibilita um conjunto de brincadeiras através da acção dos

dedos da criança, que permite um conjunto alargado de reacções como o movimento do vento, tirar o chapéu de uma das personagens, manipular a atmosfera, desenhar as suas próprias ilustrações, adicionar novos elementos à ilustração, entre outros tipos de interacções. Neste exemplo, o ilustrador teve a capacidade de adaptar as ilustrações do livro tradicional para um meio digital de forma interactiva e animada, tirando partido das potencialidades que o novo suporte oferece.



### 3.1 · Procedimentos técnicos

Quando o ilustrador desenvolve as suas ilustrações para um suporte tradicional para ser impresso em gráfica, deve ter em conta inúmeros fatores que garantam a qualidade pretendida, preocupações muito diferentes das que terá se estiver a trabalhar para um livro em formato de iPad. No livro “Manual prático de produção gráfica” de Conceição Barbosa (2012), a autora aborda esta temática de onde derivam diferentes procedimentos tais como: a preparação dos ficheiros para a impressão; a escolha correcta das cores; a avaliação e a correcção das provas de cor; a escolha do processo de impressão; a escolha dos suportes adequados, os acabamentos mais indicados, entre outros aspectos, que se diferenciam dos procedimentos técnicos a ter em conta num trabalho para iPad. Enunciamos, de seguida algumas destas diferenças a ter em conta:

Formatos das imagens: num livro tradicional para impressão o formato Tiff (Tagged Image File Format), que permite guardar a imagem com maior resolução (mas que também a torna mais pesada), é o formato mais comum e apropriado para a impressão

**F3, 4.** À esquerda a primeira versão do livro “Alice no País das Maravilhas” de Lewis Carroll (1998), em versão impressa. À direita uma última versão do mesmo livro em versão digital (2010), em forma de aplicação. Nesta segunda versão a mesma imagem ganha interacção: o pescoço, o tronco e as pernas da personagem aumentam ou diminuem consoante o movimento e posição que escolhemos para o iPad.

de imagens que virão a ser utilizadas em processos de impressão de grande qualidade, como é o offset.

No iPad o formato mais utilizado é o JPG (Joint Photographic Experts Group), um formato universal, de menor qualidade pela compressão que aplica nas imagens ao guarda-las, mas é o formato mais aconselhado para gravar fundos, por tornar o ficheiro mais leve. Ainda para trabalhos em iPad o formato PNG (Portable Network Graphics), que utiliza um sistema de canais alfa, é o mais apropriado para elementos sem fundos, muito utilizado em imagens interactivas ou animadas.

Sistema de cor: Segundo Conceição Barbosa, “há duas formas de criar cor: através da luz ou através da tinta.” (Conceição Barbosa, 2012, pág. 30).

Num livro tradicional para impressão utiliza-se o CMYK (composto por cores substractivas), sistema de cores formado pelas letras iniciais de Ciano/ Cyan, Magenta/ Magenta, Amarelo/ Yellow e Preto/ Black (esta última representada pela letra “k” numa designação que vem de longe, onde a chapa que continha a cor preta era chama de “key plate”). Este sistema funciona tendo por base estas quatro cores que, combinadas entre si, formam uma alargada gama de tonalidade.

No iPad o sistema de cores adoptado é o RGB (composto por cores aditivas), que deriva das palavras Vermelho/ Red, Verde/ Green e Azul/ Blue. Este sistema é mais adequado para dispositivos eletrónicos como monitores de TV, computadores, scanners, câmaras digitais, entre outros.

Resolução de imagem: “A resolução de uma imagem é o seu indicativo de definição e detalhe.” (Conceição Barbosa, 2012, pág. 27).

Na impressão a resolução da imagem consegue-se através de maior ou menor concentração de pontos impressos. Já no ecrã, onde a imagem é composta por um conjunto de pontos com cor e luz, a resolução é conseguida através do número de píxeis (picture element). Nesta lógica, quanto maior for a resolução “maior é a concentração de ppi - pi-pixels per inch - e maior a concentração de pontos” (Conceição Barbosa, 2012, pág. 27).

Na impressão do livro tradicional preparam-se as imagens para serem gravadas com uma resolução de, pelo menos, 300 dpis (dpis deriva do inglês “dots per inch”, ou seja, o número de

pontos por polegada), a resolução ideal para offset. Em formatos digitais como o iPad (e falamos apenas das versões existentes até ao momento) o formato deve ser de 1280 x 768 px (sendo que px é uma abreviatura de “pixel” que deriva das palavras “Picture e Element” que se referem à unidade mais pequena existente num ecrã), se trabalharmos para a versão 1 ou 2 do iPad, ou de 2048 x 1536 px na versão 3, ambos a 72 dpis.

Existem ainda outros factores a ter em atenção neste tipo de transições entre suportes tais como, no caso do livro impresso, o uso do bleed (excesso de papel nas margens da folha que serve como uma segurança para garantir que o corte das folhas não seja efectuado de forma incorrecta) e os acabamentos que tornam o objecto mais refinado como é o uso de vernizes, cortantes, sobre-capas, pantones metálicos, etc.). Na fase de produção existe todo um conjunto de regras que facilitam a leitura do sistema gráfico num ficheiro para impressão, como o uso de linhas tracejadas para assinalar as dobras e vincos e as linhas contínuas para indicar a zona de corte. Os cortantes, as máscaras de verniz localizado, a estampagem a quente ou os cunhos devem ser igualmente identificados segundo os códigos próprios de cada gráfica.

No caso do iPad, existem outros fatores importantes a ter em conta como é o uso de imagens animadas que permitem vídeos em formato H264 até 1080 px (MPEG4), a 30 FPS (frames por segundo / frames per second); o som pode ser em formato mp3 (8 a 320 kbps) ou wav. O tamanho dos ícones para iPad 1 e 2 devem ter as seguintes medidas: 48x48 px. E para iPad 3: 72x72 px.

Além destas características técnicas, o ilustrador deve ainda ter em conta que ilustrar para um formato digital implica trabalhar em equipas multidisciplinares, que podem ser constituídas por elementos de áreas tão distintas como músicos e compositores, animadores, programadores, escritores, designers, etc. É importante que o ilustrador seja capaz de se integrar em equipas dinâmicas num trabalho com o mesmo objectivo comum.

## Conclusão

Como referido anteriormente, do ponto de vista da leitura de livros em formatos de aplicação, o iPad introduziu uma nova forma de se relacionar com o utilizador, de ler e interagir com a história, através de um conjunto alargado de novas possibilidades

de escolha e funções onde, por exemplo, a pressão, o calor ou o movimento podem interferir com os diferentes finais da narrativa, através das opções que vão sendo tomadas pelo utilizador. Se o livro tradicional, através do manuseamento das folhas, desperta sensações como o olfacto e o tacto, por sua vez, o iPad, introduz novos elementos de interesse como o som ou a imagem em movimento.

A evolução de um meio para o outro traz consigo novas ferramentas, novas formas de as usar e um grau elevado de experimentação, que nos leva a refletir sobre um conjunto de questões, especificamente na área da ilustração, que nos interessam referir: o ilustrador estará apto a fazer esta transição? Conhecerá o suficiente para ser capaz de adaptar o seu trabalho ao novo meio? Que novas regras ou estratégias o ilustrador deve ter em conta quando ilustra um livro para iPad? Estas são apenas algumas das questões que estão na origem da nossa investigação que se encontra ainda numa fase inicial. A partir daqui seguiremos com o estudo, tendo como determinação que, para desenvolver uma aplicação neste tipo de suporte, é necessário conhecer bem o meio e compreender as suas capacidades, a fim de beneficiar por inteiro das suas potencialidades.

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# DO DESENHO TRADICIONAL AO DESENHO DIGITALUM

Caso de estudo “Wreck this Journal” vs “Wreck this App”



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## Abstract

Tendo como ponto de partida um caso de estudo que compara dois livros de actividades (um livro tradicional no suporte físico, “Wreck this Journal”, adaptado para um livro digital, “Wreck this App”) da autora Keri Smith, propomo-nos analisar fundamentalmente as possibilidades do desenho de representação em ambos os suportes. Abordaremos ainda outros temas paralelos segundo parâmetros previamente definidos, que irão permitir comparar e analisar as propriedades de cada objecto, enquanto potencial espaço de representação. Este trabalho procura, assim, demonstrar de que forma estes dois suportes se complementam, livro impresso e livro digital, e de que forma podemos beneficiar com a introdução de novas técnicas e da possível transferência de conhecimentos adquiridos num objecto de estudo para o outro. Independentemente de permitirem diferentes experiências de interacção e de registo, torna-se relevante a forma com que estimulam a criatividade e a procura de novas formas de representação.

## Keywords

Desenho manual  
tradicional, desenho  
manual digital,  
interactividade.

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## Introdução

Este trabalho pretende analisar e comparar as possibilidades e contributos do desenho manual no suporte tradicional do papel em relação ao suporte digital. Para tal partiremos de um caso de estudo, um livro de actividades em formato impresso, “Wreck this Journal”, da autoria de Keri Smith, posteriormente adaptado para um livro de actividades digital, disponível em forma de aplicação, “Wreck this App” (especificamente para dispositivos com superfícies de interface de toque como tablets e telemóveis, com sistema operativo iOS, Android 2.1 ou superior). Os livros desta autora têm sido uma referência para a dissertação que nos encontramos a desenvolver no âmbito do Mestrado em Ilustração e Animação no Instituto Politécnico do Cávado e do Ave, que tem como tema “O desenho como forma de construção pessoal”, pelo grau de interactividade e experimentação que Keri Smith tenta proporcionar ao leitor/utilizador em quase todas as suas obras. O factor inovação<sup>1</sup> foi outro dos motivos que nos levou a escolher estes dois objectos. Por um lado pela adaptação de um livro de actividades ao suporte digital, uma ideia relativamente nova e que assim, esperamos, nos venha a possibilitar a construção de um estudo mais aprofundado, pelas vastas possibilidades técnicas que ambos possuem. Por outro lado “Wreck this Journal” é, por si só, uma novidade, pois ao contrário da maioria dos livros de actividades que incentivam o leitor a, por exemplo, colorir por dentro das linhas ou fazer o melhor desenho que conseguir, aqui o erro e o acidente estão integrados no processo de desenho, com o objectivo de incentivar o leitor a explorar outras formas de representação para além das mais comuns (o mesmo se verifica na aplicação, embora aqui haja outras possibilidades técnicas ao nível da interacção com o dispositivo).

Antes de iniciarmos a nossa análise comparativa, importa definir conceitos e nomenclaturas que irão ser usadas ao longo deste trabalho. Assim, quando mencionarmos “livro” (ou “Wreck this Journal”) estaremos a fazer referência ao livro físico (impresso) e quando mencionarmos “aplicação” (ou “Wreck this App”) estaremos a fazer referência ao livro de actividades em suporte digital. A razão pela qual não utilizamos e-book (ou e-picturebook) para definir o livro em suporte digital é pelo facto de - ao contrário dos e-books, que podem ser lidos em “softwares de leitura

próprios que podem ser usados em computadores pessoais, PDA, smart-phones ou dispositivos próprios para a leitura de e-books” [1] - aqui é necessário um software específico que possibilite o acesso e a navegação do conteúdo, que por sua vez só pode ser lido em hardwares como smart-phones ou tablets. Deste modo, denominamos “Wreck this app” como uma aplicação, neste caso uma aplicação móvel, específica para dispositivos móveis. Segundo o site “Wikipedia”<sup>2</sup> uma app (abreviação de Software aplicativo ou aplicação) é um “programa de computador que tem por intuito ajudar o seu utilizador a desempenhar uma tarefa específica, em geral através de processamento de dados”, que podem ser lidos, por exemplo, em softwares como o “Word” ou o “Internet Explorer” (presentes na maioria dos hardwares) ou em aplicações móveis específicas para dispositivos móveis (como é o caso da aplicação “Wreck this app”). É interessante notar que este tipo de aplicação é normalmente pensada para dispositivos que, pelo seu tamanho e portabilidade, se assemelham ao formato do livro físico.

## Enquadramento

Como se tem verificado ao longo da história, os avanços tecnológicos foram alterando a forma como nos relacionamos, como temos acesso e armazenamos a informação e, conseqüentemente, o leitor alterou o seu modo de ler. Segundo Santaella (2004) o leitor contemplativo da era pré industrial, do livro impresso e da imagem fixa (que praticava uma leitura isolada e introspectiva) deu lugar ao leitor fragmentário, que surge após a Revolução Industrial, com o aparecimento do jornal impresso, da televisão e do cinema. A flexibilidade deste leitor, habituado a tipos de leitura mais fugazes e a dispersar a atenção pelo texto (consequência de uma nova disposição/apresentação dos conteúdos, de forma fragmentada), deu lugar ao aparecimento de um tipo de leitor mais recente, o leitor imersivo, preparado para a leitura de múltiplas imagens e que possui novas formas de percepção e compreensão que os meios digitais, com estruturas não lineares, estão a fazer emergir.

Desde o primeiro e-book, criado em 1971<sup>3</sup> por Michael Hart (“Project Gutenberg” - a primeira livraria digital que disponibilizou uma vasta quantidade de livros que existiam em suporte físi-

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Agosto de 2012

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<sup>1</sup>. Segundo as pesquisas efectuadas até ao momento, temos conhecimento de aplicações com actividades de desenho e álbuns ilustrados que ao serem adaptados ao suporte digital adquirem propriedades interactivas, embora não tenhamos conhecimento de livros de actividades adaptados ao suporte digital.

co) muitas têm sido as evoluções nesta área. Com o aparecimento de novos dispositivos electrónicos na 1ª década do séc. XXI, (nomeadamente dispositivos próprios para a leitura de e-books ou dispositivos como telefones móveis e tablets que incorporam softwares de leitura de e-books) o e-book adquiriu outras valências, como a introdução de som, vídeo, acesso à internet e a interactividade em ecrãs multi-touch, que possibilitou o aparecimento de novos projectos.

Neste meio digital surgem, então, novos conceitos de livro como: adaptações de livros tradicionais que permitem ao leitor interagir com alguns objectos (como “Alice In Wonderland” de 2011); adaptações de filmes animados que incluem, por exemplo, som, animações ou actividades como desenhar ou tocar piano (como “The Fantastic Flying Books of Mr. Morris Lessmore” de 2011); ou outros conceitos híbridos como os livro-jogo que permitem o leitor intervir e mudar o rumo da história (como “Gamebook Adventures” de 2010). De uma forma geral os livros, no suporte digital, vieram acrescentar novas características ao processo de leitura que incluem agora elementos multimédia e que ampliam as nossas possibilidades de leitura e de navegação. Do mesmo modo, e numa tentativa de acompanhar esta tendência, o livro físico procurou criar mecanismos atractivos que estimulassem o leitor, com mais interactividade e originalidade ao nível do design gráfico. Exemplo disso é o trabalho de Keri Smith com a compilação de três livros (“Wreck this Journal”, “This is not a book” e “Mess”) numa só caixa a que chamou “Wreck this Box” (2010) sendo que num dos lados da caixa tem uns óculos para destacar, recortar e utilizar no uso dos livros. O mesmo aconteceu mais tarde com as actualizações do livro “Wreck this journal”, que conta já com quatro versões, sendo que cada uma das edições tem uma capa diferente (a original, outra feita com fita cola adesiva, outra com malha vermelha e outra com um saco de papel). Este conjunto de quatro livros denominados por “Wreck This Journal Bundle Set” (2012) podem ser comprados todos juntos por um preço mais baixo.

## O universo de Kery Smith. Análise comparativa: “Wreck this journal” (2007) e “Wreck this app” (2011)

Neste tipo de objectos torna-se importante envolver o leitor na construção do livro, dando-lhe mais poder de decisão, tal como acontece nos meios digitais onde há uma grande colaboração entre autor e leitor/utilizador. Aliás, Keri Smith é conhecida por ser autora e ilustradora de livros que abordam o tema da criatividade e que procuram envolver o leitor na sua construção, o que faz deles livros interactivos. Tal como observou John Duff, editor da Penguin: “The interactive nature of Keri Smith’s work lends itself perfectly to the app world...” [2]. Esta procura e gosto em explorar e registar o que nos rodeia está presente na maioria dos livros da autora Keri Smith que são uma referência pelo tipo de registo (manual e descomprometido). Uma outra característica destes livros é serem livros de actividades para adultos com o intuito de lembrar a emoção de ser criança, com o inerente gosto pela descoberta. “Wreck this journal”, publicado em 2007 pela editora Perigee, sugere outras possibilidades técnicas para além das tradicionais, nomeadamente que se rasgue, martelete ou queime a página (pretende-se que o leitor faça deste livro um laboratório de experiências, como se de um diário gráfico se tratasse). O livro incentiva o leitor a observar e documentar o que o rodeia e propõe que se repense a utilidade do livro, para além das funções para as quais foi inicialmente criado ou que usualmente lhe atribuímos. Com uma capa mole, de tamanho próximo do A5 (tamanho da maioria dos sketchbooks) o livro é constituído por 92 actividades, sendo que cada dupla página tem uma frase que orienta e guia o leitor/autor convidando-o a preencher o espaço vazio através do registo do desenho. Segundo a descrição do site “Amazon” este é um livro ideal “para quem tem dificuldades em iniciar, manter ou finalizar um diário gráfico” [3] pois contém actividades inovadoras que convidam o leitor/autor a registar o melhor erro ou acidente, no fundo um convite para “destruir” o livro através de uma série de actividades “que têm como objectivo principal fazer com que o leitor experiencie o verdadeiro processo criativo” [3] (que não é perfeito).

A frase presente na folha de rosto do livro e da aplicação “to create is to destroy” reforça esta ideia, convidando o leitor/autor

a experimentar novas técnicas, arriscar, quebrar as regras, fazer o oposto do que está habituado, ou seja, a romper com um cânon. Tal como a história da arte nos tem demonstrado as grandes mudanças acontecem após uma ruptura com os modelos anteriores. Como observou Preckler (2003) “o impressionismo é a primeira corrente artística que surge verdadeiramente avançada e inovadora (...) emerge no último terço do séc. XIX e supõe uma troca estrutural na estética tradicional de tal ordem, que rompe com todos os modelos anteriores e abre as portas, definitivamente à arte do séc. XX.” [4]. Este movimento surge como oposição ao romantismo e academismo, nomeadamente com a saída do atelier para a ruas e a representação do movimento. O Dadaísmo, uns anos mais tarde, fez o mesmo. Aliás a expressão “destruição também é criação” [5] ficou associada a este movimento que “deu uma grande importância ao acaso e ao aleatório, visto como um caminho para a liberdade” [6]. Esta negação de convenções com as inerentes atitudes um pouco provocatórias tornaram possível o aparecimento de novas técnicas plásticas como o ready-made ou as fotomontagens. “Os seus processos aparentemente destrutivos serviram para recriar o caminho da arte, utilizando uma imaginação inventiva inesgotável, com recursos ao absurdo e ao incongruente, valorizando tudo o que era espontâneo, primitivo e inconsciente e negando a razão” [7]. As actividades do livro ou da aplicação do livro são uma forma do leitor procurar outras possibilidades técnicas, de arriscar, perder o controlo, e de experimentar formas de representar inovadoras. Por outro lado a ideia de destruir pode ter uma segunda leitura, na medida em que ao usar, por exemplo, um pedaço de carvão para desenhar, poderá

F1. Imagem comparativa de um mesmo conceito de livro em dois formatos distintos: o tradicional e o digital (capa).



igualmente significar que estamos a destruir o carvão para criar outra coisa.

Antes de partirmos para a análise comparativa de cada objecto de estudo (ver fig.1), é interessante perceber o que motivou a autora a adaptar o livro a outras plataformas de leitura, sendo ela também conhecida por criar livros que “oferecem um antídoto para demasiado tempo passado em frente ao ecrã” [8]. Embora as suas convicções não se tenham alterado, a autora considerou importante e fundamental estar em sintonia com os hábitos imergentes e por isso criou “Wreck this App”. Importa referir que este projecto foi fruto de uma feliz coincidência: na mesma semana em que a editora Penguin perguntou à autora se ela tinha conhecimento de alguém com capacidades para desenvolver uma aplicação em suporte digital, Keri Smith recebeu um e-mail de um fã (Chris, designer que trabalha na Citrus Suite Creative Design Studio) apresentando-lhe uma proposta para estabelecer uma parceria, pois desejava que o seu próximo trabalho fosse colaborativo e notável. Assim, em 2011 deu-se início à adaptação do livro. A intenção de Keri Smith em criar a aplicação foi a mesma que no livro – “permitir que as pessoas pudessem lidar com o seu medo da página/ecrã em branco e não terem de pensar demasiado sobre se o que estão a criar é bom ou mau, e em vez disso que deixem uma marca” [8].

Por outro lado, o facto de ser portátil e de o podermos levar para onde quisermos (tal como um livro) foi outra razão que levou a autora a optar pelos dispositivos móveis. Apesar da autora não deixar de acreditar e defender os seus princípios (que defendem uma experiência com o livro tradicional com a inerente experiência multi-sensorial) houve uma tentativa de se adaptar aos novos hábitos de leitura, direccionando-se, também, para os jovens leitores, utilizadores assíduos das novas tecnologias, que se tornaram assim, através da aplicação, potenciais descobridores do seu trabalho.

### Possibilidades do livro e possibilidades da aplicação

O conceito de livro teve de se moldar e adaptar aos avanços tecnológicos. Uma das muitas mudanças tem que ver com o suporte: ao contrário do que acontecia anteriormente, em que o objecto

era manuseado directamente, agora (quando falamos em livros digitais) ele necessita de um dispositivo electrónico para ser lido. Este tipo de leitura acrescenta alguns cuidados específicos, como a necessidade de efectuar as actualizações de software, necessárias tanto para reparar bugs (como foi o caso da primeira versão de “Wreck this App” em que a inserção de fotos não funcionava), actualizar e adicionar conteúdos, como para melhorar o desempenho e estabilidade da aplicação. Mas se por um lado se acrescentam novos cuidados de utilização, por outro o aparecimento de um novo hardware permite outras possibilidades técnicas não experimentadas até aqui, como é o caso da inserção da câmara fotográfica<sup>4</sup> no iPad 2 que veio tornar algumas tarefas mais imediatas (por exemplo em actividades que requerem a inserção de fotografias, onde é possível tirar uma fotografia e utilizá-la de imediato, em vez de termos de procurar a imagem ideal nos nossos documentos ou na internet, se tivermos acesso a ela). Note-se que, a aplicação começou por estar disponível apenas para iPhones e iPads e agora está também disponível para sistemas Android superior ao 2.1, ou seja, tem havido uma tentativa de disponibilizar a aplicação a um maior número de utilizadores (como acontece com outras aplicações que não são exclusivas de um só sistema operativo). Ao contrário do livro tradicional que podemos comprar numa livraria ou encomendar via internet, a aplicação implica, antes de mais, ter um dispositivo que custa dinheiro, mas que, por outro lado, vai ajudar a baixar o preço de outros livros digitais e permitir ao utilizador ter acesso a aplicações gratuitas (a que podemos ter acesso sem sair de casa ou em qualquer local em que haja rede disponível). Esta é uma questão com que o livro nunca se deparou porque está sempre acessível per se, pois não necessita de um dispositivo de leitura que implica um frequente recarregamento da bateria. Assim, a aplicação digital do livro vai sendo actualizada com maior frequência, acompanhando os rápidos avanços tecnológicos, sendo possível usá-los para evoluir as possibilidades técnicas do livro digital, o que não se verifica no livro tradicional, pois este não está dependente de dispositivos electrónicos, logo não beneficia dos seus progressos tecnológicos.

Como refere Lynch (2001), “o impresso tem historicamente uma vida muito longa por ter usufruído de uma ausência única de mediação tecnológica e por ser um dos mais antigos media,

4. Apesar do iPad 2 também integrar câmara de vídeo, não foi mencionado porque (para já) não é uma ferramenta utilizada nas actividades de “Wreck this app”

certamente o medium mais antigo em termos de produção e comercialização em massa. O papel – pelo menos o papel bem feito – dura muito tempo. Estas propriedades estão estreitamente relacionadas com a função e estatuto únicos dos livros.” [9].

Jay David Bolter e Richard Grusin são os autores de um texto intitulado “Remediation” (1999) no qual falam das formas de como os media tentam compensar o facto de não podermos estar em todo o lado ao mesmo tempo, oferecendo aos seus utilizadores experiências imediatas, que trazem o inatingível até nós. A primeira forma de Remediação é a Imediácia (ou transparência), onde o objectivo é apagar a presença do dispositivo mediador ao nível visual e auditivo, dando a impressão ao utilizador de que está a experimentar directamente a realidade – a pintura funcionou como um meio transparente até ao aparecimento da fotografia, que nos apresentou a realidade menos distorcida. O cinema (por ter movimento), a webcam (por ser dirigida), a televisão (por ser em directo) e a realidade virtual (por ser tridimensional) tornaram-se meios ainda mais transparentes que os anteriores – “algo que acontece sempre que surge um novo meio, que se pro-

F2. Imagem comparativa de um mesmo conceito de livro em dois formatos distintos: o tradicional e o digital (interior).



move como sendo mais real, mais profundo e mais imersivo que o seu antecessor” [10]. A segunda forma é a hipermediação que “dirige a atenção não para o que representa, mas para ele mesmo como meio de representação,” [10] lembrando ao utilizador o meio que ele usa para ver, como é o caso de um ecrã de computador com múltiplas perspectivas (com texto, ícones, menus e variadíssimas aplicações). Em relação aos contributos de Bolter e Grusin no que diz respeito ao livro é importante ter em conta que os fenómenos de remediação implicam uma natural tensão entre

imediacia e hipermediaciacia pois se por um lado o “medium digital quer apagar-se, de modo a que o observador mantenha com o conteúdo a mesma relação que teria se estivesse em confronto com o medium original” [11], por outro “o medium digital pode ser mais agressivo na sua remediação (remediation). Pode tentar remoldar inteiramente o medium mais antigo, deixando perceber a sua presença mas assegurando um sentido de multiplicidade ou de hipermediaciacia (hypermediacy).” [11].

Neste caso, o objectivo da aplicação não é que o leitor se esqueça do dispositivo que tem diante de si mas antes que reconheça o objecto inicial (um livro físico), que o manuseie de forma semelhante, e que perceba que esta hipermediaciacia traz outras possibilidades técnicas, impossíveis de realizar no livro físico (do mesmo modo que impossibilita a realização de actividades presentes no livro). Note-se que esta adaptação de livro para aplicação pressupõe uma mudança tanto ao nível dos conteúdos (alterações em algumas actividades que mencionarei adiante) como na interacção com o objecto que tem uma inerente alteração na aparência visual do mesmo (que embora sendo reduzida, altera o grafismo da página). A aplicação não procura ser um substituto do livro, mas uma alternativa, com experiências que embora diferentes, se complementam. Tal como José Afonso Furtado (2003) menciona referindo-se aos contributos de Christian Allègre (2000), “esta translação de um medium para outro exige uma muito cuidadosa reconfiguração intelectual dos conteúdos, que deve ser decidida a partir de uma compreensão renovada da sua natureza, da sua genealogia, da sua contextualização cultural e das estratégias de leitura previstas; os conteúdos devem ser reclassificados e reordenados no sistema de conhecimentos com o fito de assegurar uma nova eficácia simbólica exigida pelo novo medium. Esta recompreensão em profundidade implica por sua vez reconfigurações técnicas.” [12].

Partimos desta ideia, para analisar quais os contributos de cada meio relativamente às possibilidades do desenho (pois é sobre este tema e actividade que tratam os livros) e de que modo a transferência de um meio para outro trouxe, por um lado, algumas possibilidades e, por outro, inibiu a realização de outras. Segundo Errol Barron<sup>5</sup> (2008) existem três características que fazem do desenho tradicional e manual, essencial e relevante,

5. No ensaio “Drawing in the digital age” presente no livro “Drawing Thinking”, Barron baseia-se nas duas formas de ensinar o Desenho de Arquitectura nas escolas americanas, sendo que uma explora as potencialidades do computador e outra respeita práticas convencionais, para explicar e procurar entender como o desenho à mão continua a ser relevante num mundo digital.

para além do prazer que daí deriva: são elas o registo, a especulação e a sensação.

Registo: Por registo entendemos que, independentemente de ser feito num suporte do papel ou num dispositivo de interface de toque, o desenho requer disponibilidade de tempo. “Enquanto que uma fotografia captura um momento que nunca vai existir de novo, o desenho cristaliza um momento que nunca existiu” [13], a não ser para mim, naquele momento. Ao desenhar seleccionamos, excluímos, enfatizamos de acordo com a nossa intenção, enquanto que a fotografia coloca tudo num mesmo plano. Ambos são registos de um momento, mas no desenho há como que outro nível de entendimento, dando outros significados ao que desenhámos – há o que desenhámos e o modo como desenhámos. Embora a experiência de desenhar no papel ou num dispositivo de interface de toque seja diferente, esta ideia de registo mantém-se, com propriedades distintas e que as características que Barron menciona de seguida ajudam a clarificar.

Especulação: Através de vários estudos e abordagens diferentes, o desenho manual especula/explora. Estas reflexões, inerentes a este tipo de desenho, acabam por incorporar todo o processo pois contam uma história através de um registo sequencial que fixa tentativas, explorações, erros, descobertas, etc. A especulação é ainda mais visível se nos referirmos aos diários gráficos tradicionais, na medida em que não temos nada a orientar a nossa leitura, pois o bloco está vazio. É o espaço para especular livremente. Em relação aos nossos objectos de estudo podemos afirmar que ambos especulam, embora de maneiras diferentes, relacionadas com as possibilidades técnicas que cada um permite usar, como explicamos de seguida. Consideremos por exemplo as ferramentas de “apagar”, “voltar atrás” e “gravar” presentes na aplicação digital do livro. Elas permitem-nos realizar a mesma acção vezes ilimitadas por isso o espaço para especular é vastíssimo e pode ter abordagens diversas. Esta possibilidade de combinar rapidamente várias ferramentas (que também incluem por exemplo “inserção de tipografia”, “inserção de fotografia” ou as acções de “duplicar”, “cortar” e “colar”) fornece uma panóplia de possibilidades e agiliza ou torna a combinação de vários registos mais rápida, pois não necessitamos de ter uma mala com estas ferramentas todas, já que o programa as simula (umas com mais

veracidade que outras). Por outro lado, no livro tradicional esta impossibilidade de apagar rapidamente o que não nos agradou, pode ser uma oportunidade de experimentar outras formas de representação como a sobreposição de materiais, que nunca teríamos experimentado antes, já que só temos uma página para usar para cada actividade. Por isso acabamos por fazer uma espécie de especulação mental prévia, antes de fazermos o desenho (um pouco como aconteceu com o modo de tirarmos fotografias após o aparecimento das máquinas fotográficas digitais). Enquanto que na aplicação temos aproximadamente 12 ferramentas que podemos utilizar (e que provavelmente nunca foram experimentadas pelo leitor) de forma ilimitada (pois temos a opção de “gravar” ou “apagar” e voltar a repetir a actividade), no livro temos um número ilimitado de ferramentas que podemos utilizar uma vez em cada actividade.

Digamos que são diferentes formas de especular, mas ambas importantes, e o leitor pode assim sentir-se mais predisposto a experimentar e porventura levar uma experiência de um meio para o outro.

Sensação: Por sensação o autor refere-se aos impulsos e impressões que ficam registados e que são mais visíveis no livro “Wreck this Journal”, pois a materialidade dos objectos, tanto o suporte como os instrumentos de registos, são reais. Enquanto que em “Wreck this App” se simula um único suporte, o ecrã, e um número limitado de instrumentos de registo. As diferentes qualidades do meio que utilizamos para registo e a forma de como eles reagem ao papel é característica do desenho no livro tradicional. Aqui percebemos se o instrumento de registo deixa marca para a parte detrás da folha, se rasga a página ou se a folha fica mole porque o material é muito líquido e temos a possibilidade de entender as verdadeiras características dos materiais (uns mais duradouros, como uma mancha feita por uma caneta ou aguarela e outros mais “fugazes” como o carvão ou o pastel). Neste sentido podemos afirmar que “Wreck this App” é menos tangível pois na verdade não sentimos a materialidade do que registamos. O mesmo se verifica em relação, por exemplo, à ferramenta existente na aplicação, “impressão digital”, que permite uma única textura de impressão digital (que não é a do leitor) numa única direcção e tamanho, impossibilitando a unicidade (personalização) do

desenho. A inserção de texturas e colagens, que acontece no livro tradicional, é substituída na aplicação digital pela ferramenta que permite introduzir fotografias dessas mesmas texturas e colagens. Se, por um lado, há menos imediata por haver a perda do sentido do tacto, por outro é mais imediato no sentido de ser possível trabalhar directamente em cima de uma fotografia que se tirou (se o dispositivo tiver câmara fotográfica). Também a tipografia, que no livro tradicional tem uma maior carga emotiva pela relação directa existente entre a mão e o papel, na aplicação digital é automática e mecânica, perdendo alguma expressividade. Contudo importa referir que na aplicação temos sempre a possibilidade de escrever com a nossa caligrafia, ao escolher uma ferramenta (como o “lápis” por exemplo) e escrever manualmente em vez de usar o teclado para inserir uma fonte tipográfica (a aplicação inclui cinco fontes diferentes sendo que três imitam a escrita manual, uma imita a fonte típica da máquina de escrever e a outra é uma fonte mais conhecida dos utilizadores – a arial). Embora na aplicação disponhamos de 12 ferramentas (mais todas as combinações que podemos fazer com elas), acaba por ser mais limitado no que se refere à sensação que retiramos das experiências propostas pelas actividades (apenas no que se refere às sensações, porque “Wreck this app” tem vantagens, como já referimos anteriormente e outras que analisaremos numa fase mais adiantada do estudo, como a possibilidade de partilhar instantaneamente as actividades por e-mail, “Facebook” e “Flickr”, se se possuir ligação à internet).

**F3.** Menu de ferramentas na aplicação digital “WRECK THIS APP”



Resumidamente, as duas formas de desenhar, uma com mais imediata em relação aos materiais e suportes (livro tradicional)

e outra com mais hipermediacia tanto em relação à inserção de fotografias e tipografia como às extensões/ligações que permite (aplicação digital), são ambas experiências importantes e complementares. Tal como referimos anteriormente, alguns conteúdos das actividades do livro foram alterados para se ajustarem ao suporte digital. Assim, temos actividades que só estão presentes no livro impresso, como a “Cose esta página”, “Fecha o jornal. Escreve/rabisca nas partes laterais” e “Infunde esta página com um cheiro à tua escolha” (que estão relacionadas com possibilidades inerentes às suas propriedades físicas); actividades que só estão presentes na aplicação digital como “Desenha ou adiciona uma fotografia nesta página. Move as peças para criar uma colagem”, “A tua galeria” e “Envia uma fotografia a um amigo por e-mail” (relacionadas com possibilidades técnicas do software); e actividades que foram adaptadas do livro nomeadamente a “Cola coisas pegajosas” que passou para “Adiciona fotografias de coisas pegajosas” ou “Fura esta página” que passou para “Cria buracos nesta página utilizando um lápis”, onde podemos usar uma ferramenta que simula um buraco na folha, de forma circular com textura de madeira, como se pudéssemos ver o que está para trás da página.

Para além das características apontadas anteriormente e, segundo as directrizes do estudo de Errol Barron, elaborámos o seguinte quadro onde apresentamos outros contributos baseados nas possibilidades técnicas de cada objecto de estudo que irão ajudar a compará-los segundo diferentes parâmetros (a tabela inclui algumas questões abordadas anteriormente - as primeiras 4):

Directrizes/parâmetros	Livro <b>WRECK THIS JOURNAL</b>	Aplicação <b>WRECK THIS APP</b>
Mediação tecnológica	Instrumentos e suportes de registo	Necessita de dispositivos de interface de toque : Smartphone ou tablet com sistema operativo iOS, Android 2.1, ou superior
Preço	Livro	Dispositivo + App
Durabilidade	Pelo menos 500 anos (o livro, “até agora, demonstrou que sobrevive bem por 500 anos, mas só quando se trata de livros feitos de papel de trapos. A partir de meados do século XIX passou-se para o papel de polpa de madeira, que aparentemente tem uma vida máxima de 70 anos...” ) [14]	Não há certezas mas em princípio desde que se tenha um dispositivo capaz de o ler e se não o apagarmos ele dura o tempo que quisermos
Tangibilidade	Usamos os olhos e as mãos que tocam o livro. Temos a noção do tamanho real do livro e quantas páginas faltam para chegar ao fim, das propriedades, dos materiais que usamos e a sua reacção no papel	Menos tangibilidade, pois interagimos com um ecrã e com um número limitado de ferramentas. Não temos a percepção se estamos longe ou perto do fim do livro
Instrumento de registo	Podemos usar todos os utensílios de registo como o lápis, uma pedra, o dedo, o cotovelo, etc.	Dedo (ou outra parte do corpo) ou canetas compatíveis com superfícies de toque, com ponta que simula o toque electrostático do dedo (stylus soft rubber tip)
Orientação de leitura (fig. 2)	Fechado: vertical Aberto: horizontal	Vertical



Directrizes/parâmetros		Livro <b>WRECK THIS JOURNAL</b>	Aplicação <b>WRECK THIS APP</b>
Área útil do livro (fig. 2)		Uma dupla página para cada actividade; capa e contra-capas; lombada e restantes partes laterais do livro (só utilizável uma vez)	Uma página para cada actividade (com a possibilidade de poder gravar, apagar e repetir vezes ilimitadas)
Armazenamento		Limitado: Podemos continuar para fora do livro, mas cada página é irrepitível e única, no sentido que damos uma resposta a cada actividade. O livro ocupa um espaço físico que a aplicação não ocupa	Ilimitado: Podemos criar um número ilimitado de resposta para cada actividade (se o dispositivo tiver capacidade para tal) sem que pese mais (o dispositivo) pois é virtual (opção de "gravar" e começar de novo)
Acessibilidade às diferentes partes do livro	Acessibilidade às páginas do livro	Manual	No canto inferior direito, existe um botão de "settings", sempre acessível, onde acedemos ao "menu" e podemos ir directamente para determinada página
	Mudança de Página	Manual	Na parte inferior da página, do lado esquerdo e direito (imitando o manual)

Directrizes/parâmetros		Livro <b>WRECK THIS JOURNAL</b>	Aplicação <b>WRECK THIS APP</b>
Ligações externas/rápidas	Informação da autora	Na última página há uma referência ao site e ao próximo livro da autora	Link directo para site
	Informação de outros livros da autora	Na última página há uma referência ao site pessoal e ao próximo livro da autora	Links directos para site "Amazon"
	Partilha de informação	Pode fotografar-se ou digitalizar-se a página, passar para um dispositivo electrónico e depois partilhar	Links directos para o "Facebook", "Flickr" e E-mail
	Inserção de fotografias	Podemos utilizar fotografia real (ou outro tipo de papéis/recortes), recortar e colar directamente na página	Ferramenta permite-nos aceder à nossa galeria de imagens ou se tivermos ligados à internet, retirar de lá imagens, ou ainda, se tivermos máquina fotográfica incorporada, fotografar e usar determinada imagem
Nº de actividades		92 - só utilizáveis uma vez	60 - utilizável número de vezes ilimitado. Podemos guardar e recomençar novamente
Ferramentas de desenho		No início do livro há uma página com os materiais (50) que incluem por exemplo: cola, selos, lixo, lágrimas, saliva, jornal, cheiros, mãos, comida, tesouras, entre outros (para além dos que a autora sugere, podemos inventar outros).	12 ferramentas*: lápis; borracha; esborrar; inserir texto; inserir fotografia; caneta caligráfica; pincel; gota; duplicar; cortar/colar; impressão digital; "furar" (fig. 3)
		Há menos facilidade em apagar e editar o que se fez mas há um número ilimitado de opções técnicas	

\* Estas 12 ferramentas não incluem a opção de controlar "espessura" e "opacidade" da linha e da "cor" (10 cores e composição manual RGB); a opção de "voltar atrás" (10 vezes); e a possibilidade de fazer "zoom" em qualquer actividade. As ferramentas "duplicar" e "copiar/colar", permitem ainda fazer imagens simétricas, aumentar/diminuir o tamanho e rodar, tal como na fotografia também é possível alterar de tamanho, rodar e fazer simetrias.

Directrizes/parâmetros	Livro <b>WRECK THIS JOURNAL</b>	Aplicação <b>WRECK THIS APP</b>
Condições de leitura	Necessita de luz exterior para ser lido	Tem luz própria, por isso pode ser lido às escuras

Em termos de partilha de informação e inserção de elementos externos como fotos e ligações externas a aplicação é mais eficiente e, como já referimos, permite aceder a várias ferramentas tornando as tarefas mais rápidas, como é o caso, por exemplo, da tinta, que não precisa de secar ou da área de trabalho que se mantém sempre limpa (em princípio, o godé de tinta nunca se vai entornar por cima do ecrã, e se por acaso isso acontecer com o livro há sempre a hipótese de poder ser um acidente feliz).

Antes de concluir não podemos deixar de referir que com o livro tradicional estamos mais concentrados, enquanto que na aplicação, com o fácil acesso a tantas outras distrações (como o e-mail, o “Facebook”, ou um update de um jogo) corremos o risco de não estar completamente focados nas actividades. Uma outra característica de distinção importante é o facto da aplicação estar dependente de um dispositivo electrónico que impossibilita a sua utilização quando fica sem bateria ou tem um problema técnico, enquanto que o livro impresso, está permanentemente disponível para ser utilizado.

## Conclusão

Independentemente de ser feito a caneta, no papel, com a ponta dos dedos, ou num tablet, o mais importante é estimular a criatividade e as diferentes formas de representação do desenho. Neste caso particular de estudo sobre os livros da autora Keri Smith, tanto o livro impresso como a aplicação procuram que o utilizador se liberte dos estereótipos da representação, privilegiando a intuição e o momento. Em síntese, que nos comportemos mais como uma criança, no sentido de desenhar descomprometidamente, sem medo de errar (isto é, como normalmente nos comportamos no nosso diário gráfico, que por definição não revelamos). Com propostas divertidas, libertadoras e até “terapêuticas” estes projectos tornam os utilizadores participativos, atribuindo outras funções ao livro para além das habituais.

A aplicação pode também ser uma forma de motivar estudantes a experimentarem outras propostas nos seus diários gráficos reais, assim como uma forma de chegar a outros públicos. Tendo em conta que nos dias de hoje usamos dispositivos visuais para mediar a nossa relação com o mundo, torna-se importante a criação de alternativas, proporcionando, a quem nasce neste contexto cultural, outras possibilidades de contacto com o mundo real. Esta aplicação pode fazer com que o leitor/utilizador de “Wreck this app” experimente novas técnicas no papel, e por outro lado, é também uma forma da autora conquistar os seus leitores habituais.

*“Mais ou menos como o caminho de ferro, o livro perdeu o seu monopólio. Mas vejamos o que se passa com o comboio. Poderíamos ter imaginado que o avião e o automóvel implicariam o seu desaparecimento. Mas não aconteceu nada disso. Em paralelo com estradas sobrecarregadas, com o comboio podemos chegar a tempo... As ondas herzeianas não estão menos sobrecarregadas que as estradas. Tempos atrás sofria-se por falta de informação, mas hoje é o contrário... O utensílio impresso continua indispensável para quem queira ser responsável pela sua informação e ter uma atitude activa perante a cultura. Neste mundo banhado por ondas de imagens, o livro representa um esforço pessoal e salutar.” [15]*

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## O KANJI COMO ILUSTRAÇÃO

A sistematização do desenho em signos linguísticos



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### Abstract

O pensamento humano pode ser transmitido pela via sonora, como a língua falada, ou pela via visual, como a escrita e os desenhos. Os dois últimos, apesar de terem morfologias distintas, compartilham semelhanças. O sistema de escrita egípcio, apesar de não ser mais usado, serviu de base para outros povos e que após sucessivas mudanças originou o alfabeto latino. No Oriente, os caracteres originados da China ainda são usados em alguns países no Extremo Oriente, entre eles, no Japão. Sua característica logográfica, com origem em representações icônicas dos objetos e da realidade, pode representar possibilidades criativas ao designers gráficos contemporâneos no campo da comunicação visual.

### Keywords

cultura visual, linguagem escrita, ilustração, kanji

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A representação gráfica tem a potencialidade de eternizar a linguagem oral. Por sua vez, o desenho, um triunfo da genialidade humana, comunica visualmente ideias reais ou abstratas que podem ser compreendidas por indivíduos a largas distâncias temporais e físicas. Desde as mais antigas mensagens deixadas pelos nossos antepassados do período paleolítico há dezenas de milhares de anos atrás até às ilustrações digitais do nosso tempo, a mensagem pode ser transmitida sem a presença do interlocutor. Isso é especialmente verdade no caso dos textos, a representação gráfica da linguagem oral. Os caracteres da escrita, em suas diversas variantes, são desenhos (se considerarmos o processo de retratar ou designar algo em uma superfície através de traços). Tanto os caracteres como as ilustrações são mensagens visuais que possuem em sua forma elementos comuns como o ponto e a linha, unidades básicas do desenho. A partir da mesma matriz e do mesmo material, o ato de escrever/desenhar transmite mensagens de maneiras diferentes. Contudo será alvo deste estudo a escrita na sua variante que ainda possui estreita ligação com a linguagem descritiva do desenho que são os caracteres chineses e japoneses.

As definições e teorias acerca do desenho e ilustração são amplas. Porém para criar relações entre os sistemas de escritas, principalmente o logográfico, é pertinente expor o que se entende por ilustração nesta investigação para facilitar o desenvolvimento dos raciocínios que se seguem acerca da escrita e linguagem visual. Dentre a miríade de definições e conceitos, o termo “ilustração” pode ser considerada como um instrumento para a transmissão de ideias através de imagens de maneira concisa com ao menos três qualidades que são necessárias para a comunicação visual, são elas: conceitualização das ideias, resolução do problema da forma (sua tradução do significado para o desenho) e a clareza ou destreza na realização da imagem [1]. Na abordagem mais ampla da comunicação visual, na qual a ilustração se insere, Dondis [2] sugere como elementos básicos: o ponto como elemento mínimo que marca o espaço; a linha que articula a composição; a forma seja ela geométrica, irregular e todas as possíveis permutações; outros elementos são a direção, tom, cor, textura, proporção e dimensão. À tudo isso somam-se as técnicas aplicáveis à composição visual, como: contraste; harmonia; instabilidade; equilí-

brio; simetria; complexidade; unidade; minimização; ousadia; sutileza; acaso; sequencialidade; episodicidade; repetição; opacidade; transparência etc. Há enfim um complexo conjunto de ferramentas e elementos que fazem do desenho, enquanto linguagem visual, um assunto extenso e que, por escolha, não será mais aprofundado em seus conceitos para que haja espaço para o estudo da relação gráfica entre os caracteres e a linguagem escrita.

Embora o alfabeto latino seja composto de letras, que são representações imagéticas de sons, não se pode classificá-las como ilustrações (salvo ao se referir, por exemplo, às iluminuras do período medieval em que as letras capitulares iniciais do texto continham elementos gráficos que ofereciam à elas valor artístico e decorativo). O alfabeto latino em sua forma atual evoluiu ao longo de milênios passando por sucessivas modificações que foram tornando os caracteres em sinais cada vez mais representativos do som da língua falada debilitando progressivamente seu caráter icônico (Fig. 1).



Diferente da escrita cuneiforme dos sumérios, cujo caracteres representavam sílabas e ideias, os egípcios organizaram o primeiro sistema alfabético consonantal [3]. A escrita egípcia, principalmente os hieróglifos, possuem além da função comunicativa, uma qualidade estética que a distanciava das demais escritas do seu tempo. Esses desenhos icônicos procuravam representar por intermédio da similaridade os objetos e ideias. Fischer ainda relata que era através do reconhecimento visual do objeto representado no hieróglifo que era fornecido a primeira consoante para a leitura

**Fig. 1.** Do mais antigo para o mais recente, a evolução da forma dos caracteres a partir da escrita egípcia, seguida pela a evolução à proto-sinaítica, fenícia, grega antiga, grega e finalmente o alfabeto latino.



**F2.** Palavra “gato” em hieróglifo egípcio. Da esquerda para direita, os três primeiros caracteres possuem valores fonéticos e definem o som da palavra. O último caractere é desprovido de valor fonético e sua função é representar visualmente o significado da palavra, auxiliando na compreensão por parte do leitor

fonética do texto, então o conjunto de consoantes guiava o leitor para a palavra completa. A representação dos sons não se mantinham apenas nas consoantes únicas, havia também no sistema de escrita egípcia representações bi e triconsonantais como também os caracteres determinativos. Esse último tinha a peculiaridade de não ter valor fonético algum, consistia assim em um auxílio visual para diferenciar palavras homófonas e fornecer o significado correto à palavra. Para a palavra “gato”, por exemplo, eram necessários quatro caracteres sendo que os três primeiros tinham valores fonéticos e simulavam o som que da palavra “gato” na língua egípcia [4]. O último caractere por sua vez era a representação visual de um gato sentado com a cauda enrolada, ou seja, ajudava a determinar o significado da palavra. Como no sistema de escrita hieroglífico não havia representações para as vogais, o sistema de determinativos era especialmente útil para diferenciar as palavras homófonas.

Ao estudar o povo egípcio, fenício e grego, percebe-se que a evolução da escrita no Ocidente e Médio Ocidente privilegiou a simplicidade e praticidade em desenhar os caracteres. Os egípcios usavam os hieróglifos em situações específicas (em monumentos, por exemplo) nas quais era desejável beleza decorativa. Porém para as situações cotidianas o alfabeto hierático, uma espécie de simplificação dos hieróglifos, era utilizado pois sua economia de traços e detalhes permitia maior velocidade de escrita [5]. Essa velocidade e praticidade foi o que popularizou a escrita entre os comerciantes fenícios que necessitavam de um sistema de marcações para controle dos negócios mas, diferente dos escribas, não tinham a mesma dedicação e preparação teórica, transformando o complexo e numeroso alfabeto pictórico em um conjunto simplificado de caracteres de uso prático [6]. O Ocidente desde então abandonou o sistema pictórico e seguiu o caminho da simplicidade nos símbolos que representavam os diferentes sons das línguas, deixando de usar os determinativos.

Porém, no Extremo Oriente há atualmente em uso sistemas de escrita que derivam do sistema icônico/pictórico originários da China. A origem da escrita chinesa não é precisa e autores conferem diferentes datas para datar seu início. Igarashi [7] considera os anos entre 5000 e 3000 AEC<sup>1</sup> reconhecendo a existência de material arqueológico datado em 3400 AEC. Já Björkstén [8] cita que

é conhecido o desenho de caracteres chineses ainda no período pré-histórico, mas não podem ser considerados um sistema de escrita nessa fase. Para tanto, é sugerido o período da dinastia Shang entre 1600 e 1000 AEC<sup>1</sup> devido à riqueza de material encontrado pelos arqueologistas. Por outro lado, Fischer [9] cita grupos que defendem a época por volta de 4000 AEC, que seria considerada também a data das primeiras manifestações de escritas. Embora o próprio afirma posteriormente [10] que muitos acadêmicos considerem 2000 AEC. Sem definir datas, Peng [11] afirma que dentre as lendas acerca da origem dos caracteres e da escrita chinesa a mais aceita é a de que Cāng Jí, um dos ministros do imperador Huáng Dì, observava as pegadas deixadas por diversos animais e o desenho distinto que cada uma delas tinha. Cāng Jí conseguia distinguir os animais apenas por esses desenhos (traços e formas) e isso serviu de inspiração para criar um sistema que

<sup>1</sup>AEC e EC são respectivamente “Antes da Era Comum” e “Era Comum”. Termo laico usado para definir o primeiro ano do calendário gregoriano.

1. 6000 - 5000 BC	麻	火	風	風	山	山	山
2. 4000 - 3000 BC	墨	火	風	風	山	山	山
3. 3000 - 2000 BC	輝	火	風	風	山	山	山
4. 2000 - 1000 BC	澤	火	雷	風	水	山	地
5. 1000 BC - 500 BC	澤	火	雷	風	水	山	地
6. 500 BC - 100 AD	澤	火	雷	風	水	山	地
7. 100 AD - 500 AD	澤	火	雷	風	水	山	地

usaria as formas estilizadas dos objetos para representá-los num sistema escrito. Esse seria um sistema semelhante ao hieróglifo egípcio, com a diferença que não era um sistema consonantal e sim logográfico na qual cada imagem/caractere representava uma palavra ou ideia.

Apesar das adaptações dos caracteres ao longo de milênios, o sistema de escrita chinês permanece em uso não apenas na China mas em outros países, como Hong Kong, Macau, Singapura, Malásia, Japão e Coreia (embora forma muito escassa atualmente).

Embora haja grandes saltos gráficos no que diz respeito à simplificação ou estilização entre os desenhos originais e os mais recentes, a qualidade logográfica, ou a relação imagem-palavra

**F3.** Evolução dos caracteres chineses. As versões mais antigas são apresentadas na primeira linha e seguem em ordem cronológica até a última. Os significados da esquerda para direita são: pântano, fogo, trovão, vento, água, montanha, terra e céu.



Fig. 4. Evolução do radical “água” inserido no caractere “pântano”.

2 Os radicais podem ser considerados transparentes ou opacos de acordo com as pistas que fornecem para a interpretação dos caracteres. Quando há uma relação semântica entre o radical e o caractere, o radical pode ser considerado transparente. Se essa relação semântica não for clara, são radicais opacos.

não foi deixada de lado. Além disso, como é possível observar na evolução da escrita no Ocidente e no Médio Oriente que, como anteriormente visto na sequência evolutiva entre a escrita proto-sinaítica e latina (fig. 1), têm por regra a simplificação, seja ela na redução gráfica (traços e formas) ou no número de elementos que compõe seu sistema de escrita. Os desenhos dos caracteres chineses foram sendo modificados para abrigar um número cada vez maior de palavras que surgiam na língua oral já que cada caractere representava uma palavra e não havia um alfabeto para compô-las. Logo a livre representação original dos desenhos que retratavam a palavra/ideia foi sendo adaptada, principalmente para criar um sistema o qual poderia simplificar a criação de novas palavras com um número limitado de símbolos ou desenhos. A qualidade icônica foi diluindo-se vagarosamente em traços de qualidade mais abstrata mas com valores semânticos. Ao observar os caracteres “pântano” e “água” (primeira e quinta coluna da fig. 3), nota-se que “pântano” tem inserido em seu desenho o caractere “água” (fig. 4). Na natureza, um pântano é um terreno rico em vegetação que possui água estagnada, ou de escoamento vagaroso. Os traços que representam a água estão cercados por outros traços, transmitindo a ideia de água presa, isolada, estagnada como ocorre em um pântano.

A inserção desse caractere como parte integrante de outro caractere auxilia na compreensão por parte do leitor. A isso dá-se o nome de radical. Feldman e Siok [12] efetuaram pesquisas que demonstram a importância do radical na análise semântica de um caractere chinês<sup>2</sup>. Assim, o radical é uma estrutura sublexical que compõe um caractere, possuindo um significado intrínseco que poderia ser comparado ao morfema dos sistemas de escrita alfabéticos [13]. O desenho do radical, assim como dos caracteres por inteiro, foi sendo gradualmente simplificado e a sua forma original de qualidade icônica para formas abstratas que perderam muito (mas não totalmente) a estreita relação de semelhança entre o objeto que representavam. A evolução dos caracteres fez com que os traços fossem modificados, porém, mesmo após milênios de desenvolvimento, “água” ainda faz parte da palavra “pântano”. Nota-se que o caractere “água” (segunda coluna) apesar da alteração na sua forma e número de traços, manteve a estrutura de um traço principal ao meio acompanhado de traços menores em

ambos os lados, é um desenho que representa de maneira icônica um rio ou a sua correnteza sob um ponto de vista contrapicado. Entretanto quando colocado no papel de radical, os traços foram simplificados e reduzidos sempre que aparecem na área esquerda do caractere.

Outros exemplos são a junção do radical 宀 que representa “casa” com o logograma “mulher” 女 (que também funciona como radical em outras situações) resultando em 安 que significa “calma”, “tranquilidade” que seria o sentimento da mulher ao estar em casa. Da mesma forma, ao juntar os caracteres (que também funcionam como radicais em outras situações) 力 “força” com 田 “campo de arroz”, resulta em 男 “homem”, ou seja, aquele que aplica sua força nos campos de arroz [14]. Assim a forma de construção das palavras ou ideias usando o sistema de escrita chinês é primeiramente uma construção visual de significados antes de ser uma construção puramente fonética como o alfabeto latino.



Fig. 5. Representação ilustrativa da formação dos caracteres “força” e “campo de arroz” à esquerda e o caractere resultante “homem” à direita.

Exatamente por não ser um sistema de escrita fonético e não possuir um alfabeto, a curva de aprendizagem tanto da língua chinesa como japonesa é mais acentuada do que as línguas de origem latina. O processo mnemônico é intenso e vagaroso devido aos milhares de caracteres existentes. Métodos menos ortodoxos e mais criativos utilizam uma história gráfica para cada caractere para ajudar na memorização (fig. 5 e fig. 6).

Fig. 6. Representação ilustrativa da evolução do caractere “mulher” à esquerda e o caractere “tranquilidade” à direita na parte superior. A ilustração mostra uma mulher dentro de casa.

Como é possível constatar, apesar de terem sido modificados e simplificados desde sua concepção, há caracteres chineses que ainda possuem resquícios de proximidade pictórica em relação ao objeto que procuram representar (embora é necessário um exercício de abstração para perceber a relação entre caractere e objeto). Aliás, como visto anteriormente, foi pela abstração e simplificação de formas do mundo material que esses caracteres foram criados. Pode-se afirmar que há na elaboração desses caracteres, considerando a época que foram desenvolvidos, um planejamento visual e organização funcional característico do que se conhece atualmente por design visual. As ilustrações das figuras 5 e 6 não explicam histórica ou cientificamente as origens desses caracteres, mas os traduzem em ilustrações e reconstróem a relação de semelhança icônica entre si. A linguagem falada na China foi graficamente sistematizada para a escrita através da percepção visual do mundo deixando para segundo plano ao longo do seu desenvolvimento a possibilidade do sistema silábico como o desenvolvido no Japão através do hiragana e katakana e o hangul desenvolvido na Coreia para substituir os sistema chinês.

No Japão, os caracteres chineses receberam o nome de kanji (hànzì em chinês). Segundo Rogers [15] esses caracteres foram introduzidos no Japão em torno do século III EC através da Coreia e foram os próprios coreanos, que já utilizavam os caracteres chineses, que iniciaram os japoneses na escrita dos caracteres chineses.

O Japão historicamente possui grande abertura para absorver influências externas, algumas vezes sendo até mesmo acusado pelo estudioso dos assuntos japoneses Basil Hall Chamberlain como uma “nação de imitadores” na qual pouca coisa foi lá genuinamente criada [16]. Essa afirmação pode ser considerada injusta por vários aspectos que não será possível abordar nesta investigação, mas no âmbito do sistema de escrita os japoneses criaram um sistema silábico para auxiliar nas inflexões verbais e demais funções gramaticais que são inerentes à língua japonesa e que o sistema de escrita chinês não contemplava. Uma das criações mais relevantes da língua escrita japonesa no que diz respeito à percepção das imagens são os alfabetos silábicos (hiragana e katakana) usado em conjunto com um sistema logográfico de escrita (kanji).

Há evidências que a interpretação do kanji e do hiragana / katakana (ambos daqui pra frente denominado “kana”) acontecem em regiões diferentes do cérebro. Nakamura et al. [17] sugere a interpretação do kanji pelo cérebro demanda processos mais globais, ativando, entre outras, área do girus fusiforme no lado direito de cérebro. Cita também que é necessário utilizar áreas especializadas no reconhecimento não apenas de palavras, mas de



objetos complexos como faces humanas. O kanji, por sua natureza logográfica, permite que seu significado semântico seja decodificado sem a mediação fonética, algo que não ocorre ao lidar com o sistema escrito silábico. Isso pode ser comparado à decodificação de desenhos, em que a ilustração de um gato pode ser compreendida sem contudo saber o sentido fonético de tal desenho. Outras evidências da diferenciação que o cérebro faz entre o kanji e o kana pode ser visto na investigação de Kawamura et al. [18] ao concluir que há áreas distintas do cérebro para a interpretação de cada um dessas formas de escrita e que pacientes com lesões na parte posterior do girus temporal esquerdo tem algum grau de agrafia na leitura e escrita do kanji. Uma das razões é a função de memória visual das palavras que é mais específica no kanji do que nos caracteres silábicos. Outras investigações que também corroboram com essas conclusões a respeito da escrita logográfica, especificamente o kanji, são de autoria de Scliar-Cabral [19] que aponta para processos ocasionais no lado direito do córtex occipital ventral e Coderre et al. [20] que acusa atividades no córtex cerebral particularmente na área do girus fusiforme. Coderre [21] na sua investigação sobre a percepção de números em kana, kanji e caracteres arábicos, demonstrou que pessoas sujeitas a leitura

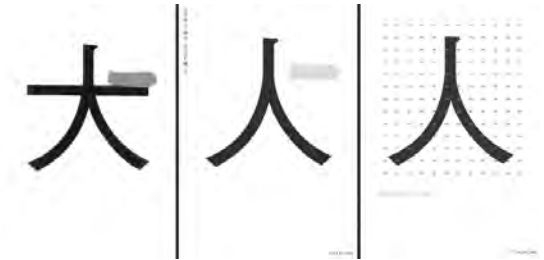
**F7.** Há uma recorrente relação entre imagem e texto nas artes japonesas (pintura e xilogravura, principalmente). Na imagem do homem com a mala é possível ler no contorno da ilustração “Fujinomaruya”. A coluna (a) identifica os caracteres originais, a coluna (b) rotaciona-os para sua posição correta, a coluna (c) mostra sua forma atual (com exceção da sílaba “no”) e a coluna (d) a sua leitura em caracteres romanos.

em kana, alfabeto silábico japonês, demonstravam processos cerebrais diferentes que a leitura em números arábicos e kanji, apontando que os dois últimos não possuem forte conexão fonológica como o kana. Dessa forma o processo de leitura partia do estímulo visual diretamente para a representação semântica do número no caso do kanji e números arábicos. Por sua vez a leitura de números em kana produzia uma tradução fonética anterior à criação de uma representação semântica.

É no âmbito da ilustração e do design que o kanji e o kana adquirem qualidades gráficas mais significantes. Em relação ao kana, há um estilo de ilustração produzida historicamente em xilogravura conhecida como moji-e (fig. 7) que em uma livre tradução seria “desenho com caracteres”. Segundo Winkel [22] os moji-e eram uma forma de jogos de palavras que usavam os traços dos caracteres kana para representar iconicamente o objeto que a palavra descreve. Ainda segundo Winkel [23], os sofisticados métodos e a enorme quantidade de xilogravuras para fins de publicidade comercial coloca em evidência o alto grau de literacia visual que os japoneses possuíam já há muitos séculos. O moji-e teria surgido da integração cada vez maior entre as imagens e palavras que faziam parte desses anúncios.

O moji-e tem uma natureza diferente das ilustrações de Peng sobre os caracteres chineses (fig. 5 e 6) principalmente no que diz respeito à semântica. A natureza silábica do kana não permite a transcrição semântica de natureza gráfica para a forma do caractere. As sílabas do kana representam apenas sons e não possuem significados intrínsecos. Ao contrário, o kanji por sua carga semântica oferece potencialidades gráficas que vem sendo exploradas no design gráfico contemporâneo. As intervenções nos caracteres vão além dos ornamentos tipográficos e chegam a criar metáforas visuais únicas para os versados nesses caracteres. Um desses trabalhos é a série de pôsteres do designer Junya Kamada para a conscientização na recolha das sujeiras dos cães (fig. 8). Kamada utilizou o caractere cão (犬 em japonês) e com uma pequena estilização na forma e na cor em um dos traços a mensagem da campanha inseriu-se elegantemente no caractere cão superando assim sua função puramente linguística (Fig. 8, (a)). Contudo, segundo as investigações de Conderre já citadas, a interpretação fonética não entra em ação nessa situação, abrindo

então a possibilidade da interpretação semântica dar-se de forma direta. Pode-se dizer que o caractere “cão” funciona como ilustração nesse pôster e a mensagem da campanha está também representada graficamente nessa ilustração.



Nas versões seguintes (b) e (c), pode-se ler o texto “犬の落とし物は、人の忘れ物です” em tradução livre para o português algo como “Os objetos perdidos dos cães são os objetos esquecidos pelas pessoas”. Com o prévio conhecimento do pôster anterior, a interpretação desse pôster passa a ser facilitada. Em (b) a interpretação pode ser ainda mais complexa devido à transparência na linha horizontal do caractere. Dessa forma obtém-se dois caracteres sobrepostos e ambos passíveis de serem compreendidos (犬 para “cão” e 人 para “pessoa”). Uma possível leitura dessa imagem é a representação da ação de recolher a sujeira deixada pelo cão, considerando que o caractere “pessoa” está intacto já que a linha horizontal que faz parte do caractere “cão” possui um tom mais claro e o traço castanho (acima à direita) perde sua função original na formação do caractere “cão” para se tornar uma representação icônica do material canino junto à “pessoa” 人. Finalmente em (c) a mensagem gráfica sutilmente responsabiliza a pessoa (人) pela imensa quantidade de “objetos perdidos dos cães” representada pela imagem já consagrada do primeiro pôster da série (a). Já aqui o traço horizontal desaparece, o que torna a leitura do caractere clara e precisa.

A história da escrita evidencia a cultura de cada povo que a utiliza. A forma de pensar e interpretar a realidade em sinais é uma capacidade humana de alta especialização. Um dos sistemas de escritos mais antigos, o sistema logográfico chinês, continua em uso ainda hoje em alguns países asiáticos, especificamente

**F8.** Os três pôsteres criados por Junya Kamada colocados lado à lado. A partir da esquerda para direita: O primeiro pôster da série criado em 2006 (a). Variações (b) e (c) ambos de 2007



no Japão. A rica cultura visual japonesa adotou os caracteres em suas artes visuais e atualmente explora o kanji de forma gráfica, atribuindo uma natureza que extrapola o limite da representação da palavra para se tornar uma quase ilustração. Esse fenômeno não é realizável com a mesma eficiência no design gráfico dos países que utilizam os sistemas fonéticos ou silábicos nas quais os caracteres não possuem um significado, mas apenas sons. Contudo, a estilização de palavras (grupo de caracteres) é possível e o estudo mais aprofundado do caso japonês pode indicar caminhos criativos para essa possibilidade.

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# CONCEPT ART E CONCEPTUAL ART



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## Abstract

Concept Art é uma atividade cada vez mais difundida na indústria do entretenimento. Entretanto seus contornos e sua origem histórica carecem de maior investigação científica. O objetivo deste artigo é fazer uma reflexão sobre as origens e os modos de operação do Concept Art utilizando a estratégia do negativo, ou seja, comparando o Concept Art com o Conceptual Art, atividades artísticas que dividem a mesma nomenclatura – o termo conceito –, e que, entretanto, têm objetivos distintos e alcançam resultados diferentes em todos os aspectos.

## Keywords

Concept Art, Conceptual Art, Animação

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## 1 • Introdução

Concept Art, também chamado de Concept Design ou Entertainment Design, é a representação visual de personagens, ambientes e objetos, ou simplesmente a criação de uma atmosfera visual para uso em filmes live action, videogames, cinema de animação e histórias em quadrinhos. Apesar de ser diretamente identificado com as produções de cunho fantástico, em função do uso mais frequente desta técnica para a criação dos mundos imaginários da ficção científica, da fantasia e do horror, o Concept Art é ainda bastante usado para reconstituições históricas e, menos frequente, no desenvolvimento de aparatos tecnológicos e figurinos específicos para produções com ambientação contemporânea, sejam ou não de cunho fantástico.

A utilização do termo conceito pelas duas formas de expressão artística pode, em princípio, indicar possíveis convergências entre o Concept Art e o Conceptual Art, entretanto o que se observa na prática é o oposto. Esta é uma das razões que motiva o esforço para buscarmos o entendimento sobre o sentido que o termo assume em cada uma destas formas de expressão artística. A possibilidade de possíveis confusões de nomenclatura, entretanto, não configura razão suficiente para se empreender esta investigação. Muitas vezes pela dificuldade em definirmos algo por aquilo que é, seguimos o caminho inverso e tentamos conhecê-la através do seu negativo, ou seja, por aquilo que não é ou é diverso. Por ser um movimento específico dentro do universo das artes plásticas o Conceptual Art possui um conjunto de reflexões mais preciso do que, no geral, as formas artísticas ligadas à indústria do entretenimento e, assim, nos fornece uma série de elementos que podem nos auxiliar na compreensão um pouco mais apurada do Concept Art.

É importante salientarmos o fato de que este trabalho é parte integrante de uma pesquisa maior. Em função do tamanho recomendado para a formatação do trabalho, alguns pontos que aqui podem estar tratados de forma um tanto superficial são aprofundados na dissertação da qual este artigo faz parte originalmente.

## 2 • Desenvolvimento

Paul Wood em seu livro *Arte Conceitual* investiga as origens deste movimento artístico e suas principais características políticas e

formais. Desde o início, entretanto, o autor nos informa que não é simples estabelecer contornos bem definidos ao movimento:

*Até mesmo o nome propõe desde o início, uma dificuldade. Já me utilizei da expressão “arte conceitual” para fazer referência a uma forma histórica de vanguarda que floresceu no final da década de 60 e ao longo da década seguinte. O termo era corretamente empregado na época, para designar uma multiplicidade de atividades com base na linguagem, fotografia e processos, as quais se esquivavam do embate que então se efetuava entre, de um lado, a arte minimalista e várias práticas “antiformais” e, de outro, a instituição do modernismo, num contexto de crescente radicalismo cultural e político*<sup>1</sup>.

<sup>1</sup>. Wood, Paul. *Arte Conceitual*. São Paulo: Cosac Naify, 2002, p. 7.

Alguns dados podem ser imediatamente retirados desta passagem. Em primeiro lugar o estabelecimento de um período histórico para o florescimento do Conceptual Art: o final da década de 1960 e a década de 1970. Este dado será importante mais à frente ao analisarmos aquilo que se conseguiu detectar sobre as origens do Concept Art. Além do destaque dado à fotografia como meio de expressão, é relevante a definição do Conceptual Art como uma atividade artística baseada na linguagem:

*Porém o primeiro a empregar, de fato, a expressão “arte conceito” foi o escritor e músico Henry Flynt, já em 1961, em meio às atividades associadas ao grupo Fluxus de Nova York. Em um ensaio posterior publicado na Anthology do Fluxus (1963), Flynt escreveu que “arte conceito” é acima de tudo uma arte na qual o material são os “conceitos”, argumentando em seguida que, “uma vez que ‘os conceitos’ são estritamente vinculados à linguagem, a arte conceitual é um tipo de arte na qual o material é a linguagem*<sup>2</sup>.

<sup>2</sup>. Ibid p.8

Como exemplo podemos citar a linguagem textual no trabalho de Keith Arnatt, “I’m a Real Artist”. Esta obra esteticamente tão simples não é mais do que uma foto onde vemos um homem segurando um cartaz contendo a frase “Eu sou um verdadeiro artista”. Há, entretanto, um jogo claro, tanto textual quanto imagético, com as características representativas da linguagem. O texto

afirma que vemos um artista real que, entretanto, está representado por uma fotografia. Ao substituir o fato que prova ser ele um artista (a obra de arte) Arnat opta por explicitar apenas o conceito. Este foco na linguagem era fruto da desconfiança dos artistas da arte conceitual em relação ao afastamento do intelecto da esfera da arte promovido pelo modernismo e sua proposta de autonomia do suporte. Com a colocação da idéia no centro do processo, e não mais a expressividade do meio (tinta, carvão, pedra), o artista conceitual abandonou a produção de objetos e tornou-se {um manipulador de signos, engajado criticamente com a ampla esfera da representação}3. Neste ponto é importante fazermos uma rápida reflexão sobre o termo conceito.

A ideia com a qual vamos trabalhar é a que entende o conceito como um fenômeno linguístico, constituindo-se em um conjunto de signos que representam um objeto. Este signo não necessariamente representa objetos reais, podendo referir-se a coisas inexistentes e não verificáveis4. Este aspecto tem relação direta com o desenvolvimento dos mundos imaginários com que o concept artist trabalha. E no contexto específico do Concept Art, o conceito é resultado desta tensão entre discurso verbal/textual e o discurso imagético que vai sendo produzido ao longo do processo através dos jogos de linguagens5 empreendidos pelas partes envolvidas na produção. O Concept Art, portanto, assume o papel de signo, pois é a representação imagética de ideias concebidas anteriormente na forma de discurso. É outra forma de simbolismo – que poderíamos chamar de simbolismo imagético – que vai complementar o simbolismo do discurso, seja ele textual ou verbal. As imagens concebidas pelo concept artist têm uma dimensão simbólica clara, ou seja, um conjunto de signos que representa alguma coisa.

Retornando ao discurso de Henry Flynt, podemos deduzir que o Conceptual Art recebe esta designação exatamente porque lida com a manipulação do código linguístico, além de jogar também com as questões semióticas suscitadas pela fotografia.

A negação da exclusividade estética pelo Conceptual Art o colocava em oposição com duas questões importantes do modernismo: a produção de objetos para a fruição estética do observador e, particularmente, a tensão entre conceito e representação. Se para os modernistas era fundamental a exploração das

propriedades expressivas do meio (especificidade do meio) com a finalidade de criar uma obra que proporcionasse no espectador uma emoção que se assemelhasse àquela experimentada durante a audição de uma peça musical – e daí a importância do abstracionismo, negando os traços narrativos que vigoravam na arte acadêmica –, para os artistas do Conceptual Art a questão estética não ocupava lugar de destaque. Em primeiro lugar estes artistas queriam uma ampliação de seus suportes, renegando assim a especificidade do meio. Em segundo lugar e não menos importante está a negação da forma, a antiforma: {a obra de arte como qualquer coisa, pedaços de lixo, feltro, matéria indiferenciada, e até mesmo nenhuma “coisa”, exceto ações e “ideias”}6. Esta negação da estética levou ao distanciamento do fazer artístico como reflexo de habilidade e sensibilidade diferenciadas. Os artistas do Conceptual Art utilizariam os meios e as técnicas comuns que a modernidade tornara acessíveis como, por exemplo, a fotografia, utilizada não como {fotografia-de-arte, mas uma fotografia amorística e de massa}7.

O movimento do Conceptual Art tinha ainda fortes inclinações políticas. Os artistas lançavam-se em práticas culturais radicais envolvendo grupos comunitários e sindicatos. Estas práticas ultrapassavam as paredes das galerias, consideradas como espaços burgueses. Paul Wood descreve um pouco deste espírito altamente politizado e predominantemente de esquerda, através das ideias do artista Ian Burn:

*Nas suas “Memórias de um ex-artista conceitual”, de 1981, Burn isolou cinco características progressivas da arte conceitual: uma reação contra o sistema de mercado; uma tendência a usar formas mais democráticas de mídia e comunicação; uma atenção maior com relação aos relacionamentos humanos reais; uma ênfase em métodos de trabalho organizado de maneira coletiva; e um interesse em educação, levando a uma desmistificação da arte e uma crescente consciência do papel que a arte desempenha no sistema social. Ele concluiu: “O real valor da arte conceitual está no seu caráter transitório, não no estilo propriamente dito.”8*

Ao contrário do Conceptual Art, as origens do Concept Art

3. Ibid p.50

4. Abagnano, 2002, p. 194.

5. Lyotard, Jean François. A Condição Pós-moderna. Rio de Janeiro: José Olympio, 2009.

6. Ibid p.30

7. Ibid p. 45

8. Ibid p. 67

são menos claras e mesmo não sendo esta a única variável de avaliação do setor é, sem dúvida, um dado importante. Há uma aparente falta de problematização sobre a área ao longo do período em que a atividade existe, o que pode ter contribuído para a pouca reflexão teórica sobre questões importantes como metodologia e linguagem. É também difícil, senão inviável, encontrar material que dê conta da construção da memória sobre Concept Art de maneira organizada e cientificamente fundamentada. Neste trabalho foi tomado como marco inicial da atividade o surgimento do departamento de ilustrações conceituais na Disney Animation. É um recorte arbitrário e obviamente deixamos de fora as possíveis relações históricas do Concept Art com outras formas de ilustração e com a pintura, por exemplo. Entretanto não é um recorte desprovido de fundamentação. A Disney é tida como o ponto culminante dos procedimentos industriais nos primórdios da animação. É sabido que Walt Disney e seus artistas e técnicos não inventaram todo o conjunto de procedimentos inovadores que deram impulso industrial à animação, mas ele foi sem dúvida um visionário ao adotar e desenvolver técnicas que incrementavam a produção de filmes animados tanto em termos qualitativos quanto quantitativos. Além disso, existe material bibliográfico expressivo sobre a produção do estúdio analisando tanto aspectos históricos e artísticos, quanto formas de organização da produção.

Giannalberto Bendazzi em seu livro *Cartoons: a hundred years of cinema animation*, chama a atenção para o fato de que nos primórdios da animação estadunidense, os estúdios de animação delegavam aos próprios animadores diferentes etapas tais como animação, roteiro e Concept Art. Não havia naquele momento uma preocupação maior com a diferenciação através do design, pois as formas eram definidas em função da facilidade para serem animadas<sup>9</sup>. Obviamente a qualidade final era determinada pelas limitações do método. Ainda na era dos personagens com cabeças circulares e braços e pernas que se comportavam como mangueiras – dentre os quais podemos destacar o Gato Felix, o Coelho Oswald e o próprio Mickey Mouse – os estúdios Disney começaram a investir no desenvolvimento visual para incrementar a qualidade expressiva de seus personagens. Walt Disney acreditava em personagens com forte personalidade e, para isso, incrementou as habilidades técnicas dos artistas do estúdio

9. Bendazzi, Bendazzi, Giannalberto. *Cartoons: one hundred years of cinema animation*. John Libbey & Indiana University Press. 2006. p.23.

através de aulas de arte para que eles se tornassem capazes de transmitir emoção através de seus desenhos. John Canemaker em seu livro *Before Animation Begins* fala da preocupação de Disney com a formação artística de seus animadores:

*Walt knew instinctively that the tyranny of the circle and rubber-hose template must be replaced by expressive and complex drawings in order to caricature reality. Most of the experienced animators he was recruiting from the east and newcomers he hired in Los Angeles were clever but limited cartoonists, untrained in academic arts* <sup>10</sup>.

A razão por trás da ênfase no desenvolvimento dos personagens não apenas em relação ao movimento, mas também da forma, era o aperfeiçoamento da narrativa. E esta busca do incremento narrativo passava pelo aperfeiçoamento dos personagens bem como de cenários e objetos de cena. No início dos anos de 1930, Walt Disney iniciou o treinamento regular em artes para os seus desenhistas, procedimento que se tornou comum no estúdio. Dentro de um profundo remodelamento do sistema de sua linha de produção, Disney contratou em 1931 o artista Albert Hurter, que se tornou o primeiro “inspirational sketch artist” do estúdio. John Canemaker nos fala sobre a importância da estética dos livros infantis europeus sobre os filmes do estúdio e do impacto do trabalho artístico que Hurter teve sobre Walt Disney:

*Those illustrative references became major stylistic motifs in the features Snow White and Pinocchio (both adapted from European literary sources), and can be directly attributed to Albert Hurter, an artist who arrived at the studio in 1931 with “a cigar in his left hand, a magic wand in his right”. Walt immediately saw in the academically trained, older artist a conduit for his vision of animation as believable, personality-driven storybook illustrations come to life* <sup>11</sup>.

Esta profunda mudança de paradigma nos estúdios Disney teria como resultado um incremento qualitativo em todas as áreas, e principalmente naquilo que no futuro ficaria conhecido como Concept Art. Não temos como afirmar categoricamente

10. Canemaker, John. *Before the animation begins. The art and lives of Disney Inspirational Sketch Artists*. New York: Hyperion, 1996, p.4.

11. Ibid p. 7.

que o Concept Art surgiu na Disney, mas o fato do estúdio ter criado um departamento unicamente voltado para esta atividade no momento em que a animação está sendo construída tanto em termos de linguagem quanto de metodologia, sugere um marco importante no desenvolvimento da área.

Assim podemos ver que as diferenças entre Concept Art e Conceptual Art começam na própria origem de ambas. O Conceptual Art se formou dentro do processo de declínio do modernismo na década de 1960. Se tomarmos como marco inicial para surgimento do Concept Art no cinema de animação a criação do departamento nos estúdios Disney, esta atividade começou seu desenvolvimento a partir da década de 1930. Disney, em seus primeiros trabalhos de longa-metragem, tinha como referência a arte figurativa e acadêmica do século XIX, principalmente os livros infantis europeus. É notório que Walt Disney contratou os ilustradores europeus de livros infantis Kay Nielsen e Gustaf Tenggren para colaborar na concepção visual de seus filmes. Isso, em plena vigência do ideário da arte Modernista.

Outra diferença importante entre Concept Art e Conceptual Art é a questão da estética. Enquanto para o conceptual artists as questões estéticas deviam ser minimizadas, mesmo quando ele exprimia suas ideias através de um meio plástico como a fotografia, no Concept Art pelo contrário, o design e consequentemente a estética são essenciais. Para os artistas do Conceptual Art a importância da fotografia era comunicacional, enquanto para o Concept Art a fotografia em geral é avaliada prioritariamente por suas características formais, servindo como matéria prima para a produção de outras imagens. Podemos citar três métodos, dentre tantos outros possíveis, de utilização da fotografia no Concept Art. Em primeiro a utilização de uma foto tratada digitalmente de maneira a possibilitar uma leitura que não existia antes da manipulação. Por exemplo, a foto de um prédio em perfeitas condições transformada na imagem de um prédio em ruínas. Uma segunda forma de utilização é a fotografia como matéria prima para colagens. O concept artist reúne partes de várias fotos em um editor de imagens, produzindo, após complexa manipulação, uma nova imagem que atende às necessidades estéticas do filme. Por fim podemos citar o uso da fotografia enquanto referência de formas, cores e texturas, bem como de estilo arquitetônico, adereços

e figurinos, animais e seres humanos. A lista é praticamente interminável. Neste caso o concept artist utiliza as fotos como um ponto de partida para a produção das ilustrações que podem ser produzidas em qualquer técnica, desde lápis grafite até pintura digital e neste ponto chegamos à outra questão igualmente importante: a das habilidades artísticas, aquilo a que anteriormente nos referimos como expressividade do meio.

Jeff Wall se refere às habilidades artísticas como a {aquisição de habilidades e sensibilidades enraizadas em uma exclusividade artística de corporação de ofício}<sup>12</sup>. Os artistas do Conceptual Art negavam o desenvolvimento destas habilidades artísticas que, entretanto, são essenciais em Concept Art. Vejamos o que diz Canemaker a respeito do domínio técnico necessário a um Inspirational Artist:

*Using pastel or charcoal, gouache, watercolor or oil paint, pen or colored pencil, and making any size, shape, or type of surface that is comfortable, they create new worlds, new characters, and new entertainment possibilities in their own individualistic graphic styles.*<sup>13</sup>

<sup>12</sup>. Wood, 2002, p. 45.

<sup>13</sup>. Canemaker, 1996, p. XI.

Uma simples consulta a um livro de arte de alguma das produções de grandes estúdios tais como Pixar ou Dreamworks, é o suficiente para entendermos a que John Canemaker se refere. É expressiva a quantidade de imagens produzidas para a definição de um único personagem em filmes como Kung Fu Panda da Dreamworks <sup>14</sup>, por exemplo. As versões dos personagens, objetos e cenários são produzidos em diferentes estilos e técnicas até que o modelo ideal seja encontrado. É importante ressaltar que a tecnologia digital veio somar novas formas de produção artística – como, por exemplo, a pintura digital – àquelas técnicas tradicionais citadas por Canemaker, ampliando os meios de expressão disponíveis para os artistas visuais de um modo geral e, consequentemente, para os concept artists.

O domínio de técnicas e materiais é essencial para um concept artist, mas não podemos nos esquecer da linguagem da arte. No campo da técnica podemos afirmar com o mínimo de segurança que a oposição entre Conceptual Art e Concept Art é clara, uma vez que o conceptual artist não entende o desenvolvimento de

<sup>14</sup>. Miller-Zarneke, Tracey. The Art of Kung Fu Panda. California: Insight Editions, 2008.

habilidades técnicas como sendo algo essencial à arte. Entretanto não podemos afirmar que no plano da linguagem ocorra exatamente o mesmo. Parece mais sensato afirmar que o conceptual artist e o concept artist fazem uso da linguagem da arte de maneira diversa. Em seu livro *Arte da Animação*, Alberto Lucena nos ajuda a entender a relação entre técnica e linguagem:

*A técnica envolveria tanto o manuseio de instrumentos quanto à formulação de processos que permitem levar a cabo a tarefa de formalização da arte. Mas para que isso aconteça é ainda necessário o emprego de uma linguagem. Interpõem-se entre a técnica e a arte uma linguagem para que a técnica possa viabilizar a expressão artística. Os componentes dessa linguagem são a matéria-prima de toda informação visual, compreendendo o alfabeto básico apenas cinco elementos: linha, superfície, volume, luz e cor. A possibilidade de manipulação desses elementos, a flexibilidade em poder trabalhar cada um individualmente, é fator determinante na qualificação do instrumento utilizado na prática artística.*<sup>15</sup>

15. Lucena Júnior, Alberto. *Arte da Animação: Arte e Técnica Através da História*. São Paulo: Ediotra Senac, 2002, p. 18.

O concept artist, portanto, é um profissional que tem o domínio de técnicas artísticas – que podem ser tanto tradicionais quanto digitais – e utiliza-se dos elementos constitutivos da linguagem da arte para desenvolver imagens que estão no âmbito da representação.

Concept Art e Conceptual Art ficam ainda mais distantes um do outro quando pensamos no fato de que o Conceptual Art se dedicava a contestar não apenas o estatuto da arte dentro da sociedade, mas, também, a própria estrutura da sociedade. Esta contestação era feita através de manifestos como os do grupo Fluxus e das próprias obras dos artistas, em sua maioria engajadas na crítica social. O Concept Art por sua vez não apresenta dimensão crítica explícita. Pelo menos nas animações comerciais produzidas pelos grandes estúdios, os concept artists não parecem ter como prioridade em seu trabalho a prática de crítica social. Entretanto seria ingênuo acreditar que não há dimensão política no desenvolvimento de qualquer tipo de mídia. Não é do escopo deste trabalho a análise semiológica ou de discurso dos filmes animados produzidos pela indústria de Hollywood, mas obviamente

os filmes desta indústria estão inseridos em um contexto de representação que reflete as posições políticas daquela sociedade em particular, mesmo quando retrata histórias passadas em outras culturas como, por exemplo, *Mulan* ou *Kung Fu Panda* cujas tramas se passam na China e *Rio*, filme da Blue Sky ambientado na cidade do Rio de Janeiro.

Não podemos deixar de abordar aqui questões que estabelecem desde já mais uma diferença radical entre Concept Art e Conceptual Art. Se o Conceptual Art assumia um antagonismo em relação ao vazio conceitual presente no abstracionismo modernista, por outro lado também não se alinhava com o modelo narrativo da arte acadêmica do século XIX. O Concept Art, pelo contrário, é totalmente identificado com o modelo narrativo das artes até o Modernismo. Sua tarefa maior é a transmissão de uma ideia através da narração e do design. Aliás, é defendido ao longo do trabalho do qual faz parte este artigo, que esta tensão entre design e narrativa não apenas constitui o campo, mas é fundamental para a própria constituição do filme animado. Neste ponto o concept artist ao contrário dos conceptual artists, está tão alinhado com artistas acadêmicos do século XIX como Alma Tadema quanto com os grandes expoentes do modernismo. Se aqueles trazem como contribuição todo o legado artístico da precisão anatômica, perspectiva e dramaticidade que faz parte da arte ocidental desde o renascimento, os artistas do modernismo vão demonstrar o valor das cores, das texturas e das formas geométricas. Apesar de os modernistas terem se colocado em oposição à arte alegórica e histórica eminentemente narrativa praticada pelos acadêmicos do século XIX, os recursos estéticos desenvolvidos no modernismo trouxeram alternativas expressivas importantes. Podemos citar, por exemplo, a UPA<sup>16</sup> e toda a sua estética calcada sobre os movimentos modernos da arte e que se tornou uma referência e uma alternativa ao estilo Disney, este sim extremamente baseado na arte figurativa e acadêmica. Particularmente no cinema de animação, não faltam exemplos de concept artists com forte influência de movimentos como o Cubismo, o Expressionismo e o Surrealismo.

Outro ponto divergente é quanto ao uso da linguagem escrita ou verbal. Os artistas conceituais utilizavam a linguagem como objeto artístico manipulando o caráter simbólico da palavra. Uma

16. United Producers of America

palavra impressa em um determinado contexto poderia ser a própria obra de arte. Para o concept artist as linguagens escrita e verbal são o ponto de partida. As ideias expressas no roteiro ou no discurso dos membros da equipe de criação são a base para a construção da visualidade.

### 3 · Conclusão

Concept Art e Conceptual Art são atividades com modos de operação distintos. Em comum têm o fato de ambas partirem de um conceito previamente estabelecido, mas os objetivos de cada uma também são diversos, o que torna os resultados obtidos praticamente opostos. Anteriormente adotamos a definição de conceito enquanto signo linguístico e se tomarmos como base o pensamento de Henry Flint, a manipulação deste signo linguístico é o objeto de trabalho do Conceptual Artist. O Conceptual Artist não precisa chegar necessariamente em outro lugar para além do símbolo, muito menos tem a obrigação de preocupar-se com questões caras ao modernismo, como a já citada expressividade do meio. Mais distantes estão ainda algumas questões que eram centrais para os movimentos artísticos anteriores ao Modernismo como, por exemplo, a verossimilhança com o tema representado. Ao conceptual artist basta a manipulação do signo e a sua consequente mensagem, que pode vir na forma de qualquer material, sobre qualquer suporte ou até nenhum suporte.

O concept artist, entretanto, está no caminho oposto. Apesar dele também interpretar e manipular os signos linguísticos, a linguagem não é o resultado final do seu trabalho. Para ele o signo linguístico é o ponto de partida e questões como a expressividade do meio e a verossimilhança – dentre muitas outras que estiveram em pauta nas artes até o Modernismo –, são fundamentais. O objetivo final do concept artist é a criação de um código visual que será inserido em uma estrutura maior, a narrativa. Ele parte do signo linguístico para gerar um código visual que encontra a sua função maior dentro da estrutura narrativa. Podemos obviamente fruir e até compreender as imagens conceituais de um filme de animação isoladas de seu contexto maior. Mas a imersão total só se dá quando estamos diante da peça acabada. O trabalho de Concept Art na indústria da animação não é um fim em si mesmo e seu verdadeiro sentido só se completa no contexto para o qual

foi criado: o filme de animação.

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# CONTRIBUTION TOWARDS A REFLECTION ABOUT METHODOLOGICAL STRATEGIES IN DESIGN EDUCATION AND THE FUNCTION OF DRAWING IN DESIGN



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## Abstract

This work presents a reflection on Design education and specifically on the role of Drawing in this area. As a subject, Design has expanded its field of action expanding into new areas such as Experience Design or Service Design. It became necessary for the designer to have more than an education based on technological knowledge or know-how.

Many authors like Meredith Davis, Don Norman or Jamie Hobson point out the urgency to review the curricula of Design courses because nowadays “... design is more than appearance, design is about interaction, about strategy and about services. Designers change social behavior” (Norman, 2011)

When shifting from a product-centered design to a person-centered design (in a structure, a service or in a relationship) what should the function of drawing in a design course be? What should its curriculum be?

Our work methodology will be to confront today’s perspectives on design theory and practice in an attempt to add to the discussion on the methodological strategies in design teaching in the contemporary context.

## Keywords

Design; Drawing; Design  
Teaching

1. This article is the result of an investigation carried out by the authors. It was presented in the 7th Ibero American Conference of University Teaching: Innovation and Quality in Teaching, Oporto – June 2012 (published in the Book of Proceedings); and in *Matéria Prima Symposium – the Practice of Visual Arts in Basic and Secondary Schools*, in FBAUL – July 2012. It was accepted for publication in the Symposium Book of Proceedings and in a magazine.

2. Stuart Bailey is a “graphic designer”, writer, critic and co-editor of the well-known magazine *Dot Dot*. His work has contributed to the Art and Design culture. Along with designer David Reinfurt he founded the project Dexter Sinister.

Our teaching activity in Graphic Design and Industrial Design courses, at the IPCA, has motivated the investigation that originated this article: Contribution towards a reflection about methodological strategies in Design education and the function of drawing in Design<sup>1</sup>.

Once our areas of study are Design and Drawing, our interest lies on the permanent challenge of our activity, reflecting on the practice of an educational exercise which is intended to be active, updated and critical. As such, we will focus for the most part on the fields of Graphic Design and Industrial Design.

As a work methodology we choose to analyze the emerging dimensions of Design that have provoked serious discussion on this subject. For this purpose, we will compare recent perspectives from various authors, belonging to design theory and practice, as a contribution to the reflection on possible methodological strategies to adopt in design teaching, more adjusted to the demands of the contemporary context. We will also approach briefly the way in which drawing (curricular structure) was developed in the realm of Design, depending on specific sociocultural contexts.

Nowadays, we face a paradigm change in the way of thinking and making design. In this context, the reflection by Stuart Bailey<sup>2</sup> seems to reveal his apprehension, common to other designers, due to the fact that the field is still held by a traditional know-how: “I suspect what I’m really against is what that term “graphic design” has come to represent, i.e. synonymous with business cards, logos, identities and advertising, and, again simply put, those are things I’m just not interested in. (...) I just mean that if we make a book, poster, or whatever, together, they’re more than mere documents of some other piece of work that exists already. Previous work may be embedded in the new form, or may dictate it, but again it becomes a “third thing”, greater than the sum of the constituent parts.” (Sueda, 2006).

In fact, the current practice of design has revealed a change in its traditional models. The curator and designer Andrew Blauvelt refers that the design produced since the mid 1990s registers that change. According to the author, we have “shift away from the simply complex and towards a complex simplicity” (Blauvelt, 2000). In other words, the “complexity” of the formal Postmodern experiences (1980s and beginning of 1990s) is gradually

disappearing from some of the more recent graphic design proposals. These are beginning to set preferably in a critical confront between its form and its content more than in stylistic questions. A growing number of designers demonstrate that the best way to “take a shortcut” in an exacerbated context of unimportant formal details where “everything goes” is to use clear visual and direct messages with a pragmatic base, eliminating the diversity of interpretations as a clear way to communicate and disseminate a cause. The complexity hidden in the simple appearance of these messages refers to the designer’s conscience as a citizen (citizen designer), attempting to interfere with reality, in a partnership with other areas, in the pursuit of a common welfare. Designers no longer feel responsible solely for their clients’ briefings but also for issues as complex as poverty, health or the environment, not only at a local level but also at a global one as, for instance, the projects “Toma Lá” by Susana António<sup>3</sup>, or “Uma Terra Sem Gente Para Gente Sem Terra” by Nuno Coelho<sup>4</sup>.

As Jonathan Barnbrook states: “We need to take our profession seriously and engage in cultural and critical discussion about what we are doing and aiming for. The modernist idea that designers are transparent messengers with no opinions of their own is no longer valid. We cannot just do our design and say issues such as unethical work practices are not our problem. We cannot say that a lack of meaningful content is not a problem. If we want the respect and attention we think we deserve, then we need to think about what happens to our work when it is seen in society and about the kind of work we want to participate in.” (Fiell & Fiell, 2003, p. 82).

Blauvelt also underlines that the open and participative structure appears as an alternative to the designer self-expression – although authorship does not disappear completely – he identifies projects which, for their collaborative aspect, suggest a game that implies actions without designer control. In what concerns these proposals the idea and the process seems to be more relevant than the final outcome.

The Postindustrial society (Bell, 1973) is increasingly inhabited by a new generation of products. The traditional relationship between the form of an analogical product and the function it was meant to have, is undergoing a deep alteration – as the digital

3. See more of her work at <http://susan-aantonio.com>

4. See more of her work at [www.nuno-coelho.net](http://www.nuno-coelho.net)

culture seeps our daily life and the functionality of a product expands, the thin link between them, breaks. The microchip has made possible the miniaturization and the more and more frequent integration of virtual devices in our daily life products. The formal freedom is a consequence of that and it puts a great challenge on the designer's hands: identifying which is the best form for a certain function and the way the user is going to relate to its contents.

The modern model, in which the focus of design was essentially on the production and on the functionality (product-centered design), was replaced by a focus on the user and usability (user-centered design). However, nowadays, this last level has been expanding into a new model: a person-centered one<sup>5</sup>. In other words, the concept of usability has been complemented by a new approach – the experience of the user (user experience) – focusing on the relationship he establishes with the product or the service.

The authors of the article “What Needs Tell Us About User Experience” refer that recent research in Human Computer Interaction (HCI) have started to fill the existent gap in what concerns the motivations and needs of people, who were very little taken into account when it came to the classic model of usability.

Although the terms user experience and experience design are still recent, the same authors recognize the existence of a common perception that the user experience is an holistic and subjective concept: “(...) is holistic – it emphasizes the totality of emotion, motivation, and action in a given physical and social context – is subjective – focusing on the ‘felt experiences’ rather than product attributes” (Wiklund-Engblom, Hassenzahl, Bengs & Sperring, 2009, p. 666). This being so, the concept of usability does not disappear but widens its field. User experience is a consequence both of “(...) product-centered aspects, such as functionality and aesthetics, as well as person-centered aspects, such as personal motivation and needs” (work quoted above).

With the technologic development and in this transition to the participative culture, various authors argue that the designer has to think less about the people as clients or users and more as co-creators and participants in the design process.

These concepts, in the area of design, raise a new number of

questions related to the relationship that the product or service establishes with the user/person. From the moment that positive sensations, like pleasure, affection or well-being are held as fundamental aspects to engage the person in a good user experience, it becomes even more relevant in a design project to pay attention to studies coming from cognitive sciences and to matters related with personal motivations, humor or entertainment.

All these considerations here fore presented about the massive changes around the nature of Design and the various emergent approaches, cause another challenge: to re-think design teaching and its curricular structure, as well as the function of drawing in design.

One of the fundamental aspects to consider in this issue, explains Don Norman, is to define the competences a designer should have to face the needs of the present society. Companies expect from designers the ability to help them face problems at a completely different scale from the traditional one. According to the author, at a time when production requires an enlargement of its structures, due to technological implications or others, related to the relationship with the “user”, there seems to be the need for a curricular revision at the traditional level of handicraft: “The old skills of drawing and sketching, forming and molding must be supplemented and in many cases, replaced by skills in programming, interaction, and human cognition. Rapid prototyping and user testing are required, which also means some knowledge of the social and behavior sciences, of statistics, and of experimental design” (Norman, 2010, p. 2). Norman points out, however, that this circumstance should not convert designers into scientists or engineers, because they have a special gift “(...) to make our lives more pleasurable” (idem, p. 6).

Yet, the problem seems to be how to include or organize these areas into the curricular structure of design courses. According to Jon Kolko: “Unfortunately, both the large and the small of human behavior and technical complexity are difficult to fit into an existing curriculum, and both are typically excluded in favor of traditional “design specific” skills (typography, color theory, two-dimensional design, three-dimensional design)” (Kolko, 2011, p. 90). The author also remarks the lack of balance between “(...) what employers want students to know and what educators are

5. The author Katja Battarbee classified the user's experience in three levels (product-centered; person-centered and interaction-focused), being for her that the person centered focalizes the human being's needs as well as the relationship between people and product. Battarbee, Katja (2004). Co-Experience: Understanding User Experiences in Social Interaction. Helsinki: UIAH.

prepared to teach” (idem, p. 91).

On her part, Meredith Davis, assumes that there is a disoriented relationship between contemporary life and what constitutes the content and the pedagogy applied in graphic design courses (Davis, 2008). For her analysis, the author confronts five tendencies from the study Visionary Design Council<sup>6</sup>, which was meant to identify the competences of the 2015 designer, with the practices and orientations of current design teaching. According to her, there is still a deeply rooted practice in the traditional model connected with a know-how model instead of a know-what one, more appropriate to the circumstances<sup>7</sup>.

To conclude, Meredith states that, despite the importance of the form as far as communication is concerned and of the learning through know-how, teachers cannot repeat the patterns of their own learning when teaching design, because it is necessary to know more than just the artifact and the form. That is why she thinks a “new design” of the curriculum is essential for the teaching of design.

Based on her investigation she is confident to argue that form can be taught within a context and not as an isolated principle or an end in itself; and that students can focus on various problems at the same time and manage the complexity without needing a progression of the learning of tools (from the simplest of elements to the most complex ones.)

She also underlines the importance of thinking design through Christopher Jones’<sup>8</sup> interpretation of “system”: “(...) is all the communicative forms and relationships within culture, which in turn, interact with other physical, technological, cultural, social, and economic systems.” For this author, the complexity of a system is defined “(...) by the number and nature of relationships between communication and other aspects of life and work” (idem, p. 11). In this system, applied to design, all communicative forms are constituted by “components” like drawing, colour, typography, texture or shape and today they are established on a “(...) complex relational system that depends on the interplay of formal, technological, linguistic, and cultural variables” (idem, p. 4).

For Jamie Hobson the subject of drawing, integral part of the curriculum of the Graphic Design course, should provide the de-

velopment of competences that will allow the students to “make analytical, intellectual and conceptual judgements” (Hobson, 1997) important for the professional practice. Regarding this, he questions the overrated significance given to certain drawing contents, namely the performance of technique execution, realistic representation or expressive language. According to the author, too much relevance is given to aesthetic and stylistic contents instead of exploring the analytic and thinking abilities that drawing can provide in the design process.

Considering the use and function of drawing in this area, he suggests a design teaching adapted to the current means of design practice: “We must consider visualizing skills that will provide ‘non-drawers’ with means by which they can give dimension to their concepts through simplification and visual shorthand” (work quoted above). He also proposes an expansion of methods of drawing applied to other areas which perform specific functions that could be useful for design process: “(...) the methodologies of engineers, scientists and cartographers, who use analytical drawing for reasoned deduction. In addition, we can learn from film-makers and others in the kinetic industries, who work with narrative and sequential images (...) drawing methods of electricians, builders, carpenters, plumbers and musicians – all of whom exhibit advanced skills of visual notation” (work quoted above).

A possible explanation for the continuity of a more traditional approach of drawing could lie on the way this subject was adapted and its purpose defined for other teaching areas, as was Design. There was already a curricular structure established in the realm of the Fine Arts. There is surely an evolution of historical character that deserves to be analyzed. Without wasting much time on this matter, which is not the subject of this article, we would like to point out two important aspects of the Portuguese case:

On one hand, the concern with the teaching of Design since the 1970s, with the foundation of IADE, Institute of Arts and Decoration (in 1969) and the creation of Design courses in Schools of Fine Arts (in Lisbon and Oporto). Until then, the artistic teaching that took place in Fine Arts Academies and Schools had not really promoted the manufacturing arts (Lisboa, 2007, pp. 500-502) nor the industries or manufactures. According to Maria Helena Lisboa there had never been a real adaptation of curricular contents to

6. Visionary Design Council, refers to a study of AIGA – The Professional Association For Design, in co-operation with Adobe, since 2006. AIGA & Adobe. Designer Of 2015 Trends. [online]. Retrieved in April 16, 2012 from <http://www.aiga.org/designer-of-2015-trends/>

7. Meredith Davis bases her theory on Sharon Poggenpohl that recognises: “design as craft” and “design discipline”, invoking respectively the concepts “know-how” and “know-what” of Habermas.

8. Meredith Davis quotation relatively to the theory of Christopher Jones development in the book *Design Methods: Seeds of Human Futures*, first published in the 70’s.

make them valuable to the training of the students, who being manufacturers wanted to improve their knowledge to better perform their tasks. (work quoted above)

On the other hand, the pragmatic conception of Drawing – a subject that was, at first, defined by the exercise of copy and the predominance of the human figure (central theme in artistic teaching) – was organized by the study of “dimensions and proportions”, “copy of engravings”, followed by “models of relief” and finally “copy of nature”<sup>9</sup>. It is important to say that the work plan involved the study of the rules of composition, the study of the ancient and the knowledge of proportions and anatomy, as crucial disciplines for future artistic performance. Posterior changes in the practice of artistic teaching and consequent adaptations of the curriculum, did not bring, in Maria Helena Lisboa’s opinion, important modifications in the teaching of drawing at the level of the established work program. Program orientations emphasized mostly figure drawing, even if some other areas of drawing are registered, namely at the level of “architectonic, ornamental and landscape drawing” (Lisboa, 2007, pp. 497-498). Even after drawing expanded into those areas “(...) the necessary conditions to create a favorable model desirable to the project of objects to produce industrially” (idem, p. 502) did not exist where the teaching of drawing could be adapted to the emerging demands in the manufacture production domain. One should note that in the same period, the German School Bauhaus (1919-1933) was developing a teaching/learning model which integrated art and technology. This School, based on the socialist ideology of William Morris, making “art for the people”, reinforced, on a first stage, a model of integration of the handicraft with industry, in a collective pedagogy between the “master of form” and the “master craftsman”, destined to the development of projects with industrial quality. This model that “(...) was intended to make the perfect union between the didactic method and the productive system (...)” was a typical example of a democratic school, based on the principle of collaboration between masters and students (Argan, 1984, p. 31). However, in Portugal, this practice did not occur, and drawing was isolated in two independent branches. On one hand, the professors of Fine Arts developed “imitative drawing” and on the other, other professionals of techno-scientific

<sup>9</sup>. As it was defined in the Statutes for the Academy of Fine-Arts. Consult the Government’s Diary (1836). Statutes for the Academy of Fine Arts (pp. 1208-1209).

areas, like engineers, taught a “technical” drawing (Lisboa, 2007, pp. 501-502).

Other perspectives have enunciated the importance of the subject of drawing because of its applicability and function in “design project methodology”. It is the case of Philip Cabau who problematizes the distinctions between “Plastic Arts’ Drawing” and “Design’s Drawing” (Cabau, 2007, p. 26). For this author, one of the major differences lies on “uses and procedures” of drawing that are explored in each one of these disciplines. In the case of Plastic Arts, drawing does not take on “(...) the nature of a pragmatic. It mostly deals with the enlightenment of the work of attention itself (...) of the events, procedures and affections (...) (idem, p. 32) But in Design “(...) drawing represents because it has to communicate and control the communication (...)” and, in this way “the pedagogic approach of drawing to Design should constitute above all a pragmatic of drawing. A complex pragmatic, conscientious of the mechanisms and operators that participate in the collective process of Design, but also of the potentialities that drawing can promote within the project development itself” (idem, p. 29).

Before this short portrait of today’s context here presented, Design is now going through a redefinition and expansion process out of its traditional frontiers: “Today design, in its broadest sense, is not only the site of important economic and cultural praxis, but equally an interface for questions of identity, politics of representation, and redefinition of social models. It is this ‘expanded’ conception, as observed in cinema and sculpture of the sixties, which should lead us to reassess the frontiers and models structuring the field of ‘graphic design’” (Bovier, 1998).

These changes imply reforms in curricular structures and have been generating big debates around design teaching. Education is under pressure and the acceptance is not peaceful for the professionals and teachers, who were put out of their comfort zone, established a long time ago. Maybe Jon Kolko’s proposal “learn from our neighboring disciplines – who generally have a long history than us but have bested nearly the problems of identity, advancement and change” (Kolko, 2011, p. 91) may help contextualize and develop new perspectives.

In the last decades, when emotion as a complementary factor

of reason began to be taken more and more seriously, the concepts relating to “visual thinking” have also been the theme for a number of researches and publications which reveal the potential of this aspect in design education. We should then add the importance of drawing exercises as an activity of thought that enables the organization of information in a project, as are, for instance, the mind map. The curricular or work plan of the subject should, then, allow the student to develop skills that help him in that process. According to what we said earlier, for Jamie Hobson, other professional areas could constitute a great source of information and learning on the relationship between the function of drawing in specific contexts that could become useful to the design process.

The need for a deep investigation related to the changing qualities in teaching and pedagogy of Drawing, and consequently, of drawing in this area, becomes clear. It is our purpose to continue this reflection, either through analysis and evaluation of pedagogic initiatives revealing alternative practice to the traditional process, developed by other teaching Institutions, including foreign ones, or through the development, application and evaluation of an interdisciplinary model on a learning context centered on the study theme here presented.

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## A EXPERIÊNCIA DO LIVRO ILUSTRADO INTERATIVO PARA A INFÂNCIA

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### Abstract

O livro ilustrado, nas suas duas linguagens, texto e imagem, é quase sempre apresentado como um estímulo para a criança aprender, falar e ler. Que, apesar de conviverem no mesmo espaço – o livro – nem sempre são tratadas nem trabalhadas da mesma forma. O uso da imagem, no livro ilustrado, está associado às idades em que a criança ainda não tem domínio da escrita sendo a descodificação e a exploração das imagens as primeiras competências a serem adquiridas. À medida que a criança se familiariza com a leitura verbal e com o desenvolvimento desta competência, a imagem é gradualmente retirada do livro. Pretendemos neste artigo apresentar o livro ilustrado e as atividades/experiências visuais como instrumentos que ajudam a criança a crescer sem frustrações através da educação da vista e do tacto, descobrindo e desenvolvendo capacidades estéticas, emocionais e intelectuais. Dentro do livro ilustrado pretendemos estudar os livros-objeto ou interativos que exploram a linguagem verbal e visual, criando uma narrativa plástica. Livros como os álbuns de Warja Honegger- Lavater onde só se usam símbolos em vez de palavras ou texto; os “Pré-livros” e os “livros ilegíveis” de Bruno Munari; os “livros vazios” e os “livros espaço” de Kveta Pacovská; os livros jogos como o “O cavaleiro coragem!” de Delphine Chedru ou “The book with a hole” de Hervé Tullet. Mas também, jogos/atividades como as criações de Mon Petit Art, Djeco e Mini Labo que permitem explorar a tridimensionalidade e o brincar ao faz de conta; entre outros. Todas estas referências são produtos de experiências visuais e tácteis, repletos de estímulos para que a criança seja capaz de explorar e comunicar verbalmente e visualmente, articulando muitas vezes entre o bidimensional com o tridimensional, a regra com o acaso e a forma com a “não forma”, permitindo uma apreciação máxima do objeto.

### Keywords

Interatividade,  
experiências visuais/  
plásticas e expressão

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## 1 · Introdução

A imagem, ao longo da história, ocupou um lugar importante na comunicação e na transmissão de conhecimentos. Das gravuras pré-históricas às iluminuras dos livros medievais aos livros ilustrados de hoje, a imagem tem sido utilizada para um mesmo fim, um propósito educativo sempre próximo da linguagem verbal e da escrita. Estas representações visuais instruem e preparam para a compreensão do que nos rodeia, para a sobrevivência, a adoração ou ritualismo, ou seja, para a vida. A imagem foi e é usada “(...) pela necessidade de tornar o texto compreensível para os menos conhecedores das letras, adoptando uma vocação de disseminação democrática de conhecimento” (QUENTAL, 2009[1]). Na literatura infantil o jogo entre as duas linguagens, a imagem e a palavra, permite à criança conhecer e perceber a sua língua materna. A ilustração surge com a função de iluminar o texto, não o traduz nem o explica, mas recria-o e completa-o. No Plano Nacional de Leitura Português pode-se aceder e consultar uma lista de livros que estão organizados por níveis, seguindo um critério de progressão que tem em conta a idade, fases de desenvolvimento e características da criança. O propósito é que a criança atinja a competência própria de um leitor experiente seguindo um caminho com várias etapas. A primeira dessas etapas utiliza a ilustração como apoio ao texto simples apresentando o livro de uma forma sugestiva e lúdica. Observando os livros para os mais pequenos e para os primeiros leitores a ilustração ocupa um lugar destacado e de importância, onde a linguagem visual corresponde exatamente ao assunto que é tratado na linguagem verbal. À medida que a criança se torna um leitor experiente, a ilustração deixa de reforçar a linguagem verbal para a completar e iluminar. A imagem é retirada gradualmente do livro e a pouca ilustração que existe nem sempre é trabalhada nem explorada para estimular todos os sentidos de quem lê. Contudo, a ilustração é importante pois “(...) permite o desenvolvimento de inúmeras competências e exige dos seus leitores capacidade de observação, associação de ideias, leitura de implícitos, antecipação de possibilidades, confirmação de interpretações.” (RAMOS, 2010 [2]).

Neste projeto, propõe-se investigar e explorar o papel desempenhado pelos livros ilustrados interativos no desenvolvimento de aptidões e competências da criança, através de uma apreciação

mais completa do objeto, o livro. A investigação é baseada em documentos oficiais do Ministério de Educação (Plano Nacional de Leitura, Orientações para Atividades de Leitura, e Currículo Nacional do Ensino Básico), na história do livro e, em particular, do livro infantil, em teses e estudos sobre o impacto da ilustração, dos livros ilustrados, dos álbuns ilustrados e da arte plástica na evolução da criança. Esta plataforma teórica será a base para criar e explorar um protótipo de um livro para a infância, em que se apresenta uma história ilustrada com atividades e jogos lúdicos. Pretende-se que o leitor intervenha, realizando os jogos e as demais atividades, tornando-se também ele criador, autor/ilustrador do livro, completando-o, produzindo um objeto único e pessoal. Pretende-se que, ao brincar, o leitor/autor desenvolva várias competências e aptidões nas áreas da leitura, da escrita, do desenho, pintura, recorte, etc.

## 2 · A ilustração, o livro e a experiência

A história do livro ilustrado descreve que a sua evolução deveu-se, sobretudo, às necessidades dos seus leitores. No século XVI a criança era vista como um pequeno adulto e era tratado como tal. A literatura específica para esta idade era rara e estava limitada aos livros escolares, às histórias morais e religiosas e, nas famílias abastadas, aos livros para adultos. Nessa pequena amostra de livros, o uso da escassa imagem é relatada como um instrumento ou utensílio de mais valia para o estudante deste século:

*“We have a fairly large body of information, including citations by Sahagun’s informants, that indicates that painted books and recitation of verse were major parts of education. As teaching tools the books were probably used to engrave myth and history, in a form that could be internally visualized in the minds of students. Their purpose, then, was not to remind readers of things they might otherwise forget, but to help make those things unforgettable. The brilliant and simple colors, the decisive black frame line, the striking clarity of icons, and the vibrant paratactic compositions - the basic qualities of indigenous style - are perfectly suited to this purpose. Students would embed innumerable myths, histories, genealogies, prayers, etc.*



*in verse form in their minds along with the visual images in the books. “(Young, 2000[3])*

Em Portugal, o reconhecimento do poder da imagem como apoio educativo e da aprendizagem foi reforçado no século XVI com o historiador e autor de obras de carácter pedagógico João de Barros na sua obra “Cartinha para aprender a ler”. Esta obra inovadora para a época associou a ilustração a cada uma das letras do alfabeto servindo de “instrumento de evangelização ao levar, em língua portuguesa e em Latim, a doutrina católica aos povos recém-contactados pela expansão marítima.” (SOUZA[4]). No século seguinte, o teólogo, filósofo e pedagogo checo, Jan Amos Komensky surpreende a pedagogia e o ensino com sua obra “Orbis Pictus”, onde descreve um mundo visível em desenhos para ensinar o Latim. Estes são dois exemplos dos primeiros livros didáticos ilustrados para crianças. Contudo, a ilustração era passiva e correspondia exatamente ao texto, limitando-se a descrever ou informar através do desenho, cor, textura a informação da linguagem verbal.

**F1.** João de Barros,  
“Grammatica da  
Lingua Portuguesa”  
(1540)

**F2 e 3.** Jan Amos  
Comenius, “Orbis  
Pictus” (1658)



grande mudança, descreve Burlingham (1997[5]), deu-se nos finais do século XVII e XVIII, quando surgiram textos como dos autores John Locke e Jean-Jacques Rousseau, com as suas ideias inovadoras sobre a educação refletindo as necessidades e as habilidades das crianças e da sua aprendizagem. Locke no livro “Some thoughts concerning Education” propõe aos educadores uma aprendizagem da leitura através do jogo e do lúdico, recomendando o uso de livros adaptados à idade, de uso fácil e cativantes

para a criança. Na obra “Émile ou Traité de l’ Education” livro II, Rousseau expõem um projeto inovador para a educação do indivíduo com novas metodologias recorrendo à capacidade educadora do desenho. Este autor vê a imagem e o desenho como uma linguagem necessária para o desenvolvimento de competências, a perspicácia do sentido, da vista e da destreza manual, e para o desenvolvimento integral da criança.

Estes princípios revolucionários sobre a criança e a sua educação foram inspiradoras no florescimento do livro ilustrado. Livros como o livro de bolso “A Little Pretty Pocket Book ” de John Newbery, 1744, ou de Charles Perrault’s, 1697, com “Histoires ou contes du temps passé”, que contém as primeiras versões escritas da Cinderela, Bela Adormecida, Capuchino Vermelho, Barba Azul ou do Gato das Botas, foram as primeiras narrativas escritas especificamente para crianças; ou os livros da “Bibliothèque Rose Illustrée” de Louis Hachette, 1858, em que a presença sistemática de ilustrações tornou-se um atrativo e uma marca na sua coleção; ou ainda os populares livros de Lothar Meggendorfer, 1880, considerado o criador do livro brinquedo móvel e do livro tridimensional. Este último autor inventou e produziu livros em que as figuras eram móveis, onde o pop-up<sup>2</sup> recriou a tridimensionalidade de um circo ou de uma casa, tudo através de engenhosos dispositivos mecânicos criados para o divertimento, superando a imaginação do seu leitor.

**2.** Pop-up, sistema de esconderijos, abas, encaixes, etc., que permite mobilidade dos elementos, ou mesmo um desdobramento em três dimensões. (Linden, 2011[23])



É no final do século XIX e XX, a par das evoluções das teorias de desenvolvimento da criança e de uma sociedade cada vez mais letrada associada ao avanço tecnológico na produção do livro, com uma impressão relativamente mais barata e rápida, que se inicia uma demanda por livros e, em particular, os livros para entreteni-

**F4.** Lothar Meggendorfer, “Grand Cirque International” (1890), pop-ups.

mento. Num mercado novo surge, o livro para criança – com os mais variados formatos, estruturas, objetivos e funções, tais como o livro-jogo, pop-ups, contos ilustrados, álbuns ilustrados, livros interativos, entre outros.

A linguagem visual torna-se um elemento indispensável nos livros para crianças confrontando-se com a linguagem verbal, num jogo entre o dizer e o mostrar. Como afirma Lewis Carroll no início da sua obra, “Alice no País da Maravilha”, a ilustração/imagem é uma característica principal e uma marca nos livros ilustrados:

*“Alice começava a sentir-se muito cansada por estar sentada no banco, ao lado da irmã, e por não ter nada que fazer. Mais do que uma vez espreitara para o livro que a irmã estava a ler, mas este não tinha gravuras nem conversas... “E para que serve um livro que não tem gravuras nem conversas?” pensou Alice.” (Carroll, 1865[6])*

Para Nières-Chevrel (2001[7]) a imagem criou o seu lugar no livro ilustrado e de acordo com o seu género pode apropriar-se do espaço do livro, o álbum ou o livro brinquedo ou o livro interativo. “Le petit Chaperon Rouge” é um dos exemplos deste tipo de abordagem, o álbum sem texto. A ilustradora descreve visualmente as personagens e os lugares usando formas simples, cores fortes, diferentes proporções ou tamanhos, entre outros. A intenção da criadora foi apresentar aos jovens leitores a linguagem dos símbolos através da narração gráfica estimulando a capacidade de descodificação e a imaginação.

**F5 e 6.** Warja Honegger-Lavater, “Le petit Chaperon Rouge” (1965)



O livro ilustrado interativo permite à criança uma apreciação mais completa porque aborda as duas linguagens: verbal e visual. A relação entre a imagem e o texto, o bidimensional e o tridimen-

sional, as experiências visuais e tácteis, a regra com o acaso e a forma com a “não forma”, em conjunto narram uma história, um momento, criando estímulos para que a criança experimente, descubra e desenvolva capacidades estéticas, emocionais e intelectuais.



“Si las imágenes siempre han sido básicas en la enseñanza de los niños, hoy son un vehículo más usado y más poderoso para llevarles no sólo conocimientos sino también numerosos estímulos sentimentales.” (González, 2000[8]) Para despertar tais emoções a ilustração procura diferentes referências presentes na vida do dia a dia e nas manifestações culturais, usando as linguagens de BD, do cinema, da animação, da publicidade, da pintura, da escultura,... funcionando como um estímulo nas competências emotivas e cognitivas da criança ao decifrar, ler e apreciar este jogo. “El niño necesita ayuda para cultivar su mundo interior: aprender a “leer de verdad” y adquirir el hábito de detenerse a contemplar, por un lado; aprender a reconocer y gobernar los propios sentimientos, por otro. Al perseguir ambos objetivos, tan importantes para los niños (y para los adultos...), los mejores álbumes tienen distintos niveles de lectura que los hacen apropiados para un público de cualquier edad.” (González, 2000[8])

O interesse nas atividades plásticas e nas artes pelas pedagogias de desenvolvimento da criança e pelo ensino é devido à sua capacidade educadora que estimula o olhar, a inteligência, o desenvolvimento da destreza manual e motor, a formação do gosto, sentido estético e crítico explorando a imagem, a criatividade e a capacidade criadora. “O contacto da criança com álbuns ilustra-

**F7 e 8.** Kveta Pacvoská, “Number Circus: 1-10 and Back Again!” (2011)

dos de qualidade surge como um excelente exercício de educação visual, iniciando-a numa percepção ativa e crítica da arte, permitindo-lhe, ainda, alimentar-se de referentes culturais, fazer descobertas e educar a sua sensibilidade e o seu gosto estético.” (Rodrigues, 2009[9]). Neste género de livros que apresentamos, um objeto interativo de leitura verbal e visual, é uma forma equilibrada que estimula, incentiva a criação artística, onde o leitor intervém e se transforma em criador e autor da história. Por isso, é importante que os educadores, todos aqueles que participam no crescimento mental e físico da criança, incentivem o trabalho pessoal repleto de estímulos com objetivo de educar a vista e ensinar a “saber fazer” explorando todos os caminhos da expressão individual e das suas possíveis e infindáveis soluções.

“Le matériau utilisé pour la page – un papier fort – est choisi quand les livres pour les tout petits invitent ceux-ci à couper, plier, tirer, soulever, etc. Ces albums donnent un pouvoir au jeune enfant et le mettent en position d’acteur. Le plaisir de “petit demi-urge” qu’offrent ces livres dépassent de loin – nous le savons – le temps des apprentissages!” (Nières- Chevrel, 2001[7])3



Fig. 9. Enzo Mari, “El juego de las fábulas” (1965)

## Conclusão

As teorias de desenvolvimento atuais, presentes na educação e na sociedade, defendem a evolução como uma sequência de etapas, dentro das quais, as crianças apresentam características diferentes e, neste contexto, o livro ilustrado deve adaptar-se a cada etapa ou grupo etário. Na atualidade, a literatura infantil é comparável com a literatura adulta na sua amplitude e diversidade de géneros, existindo livros para todas as fases do desenvolvimento do leitor, desde a infância à vida adulta (Burlingham, 1997[5]).

O uso da imagem no livro ilustrado está associada às idades em que a criança ainda não tem domínio das palavras e à medida que desenvolve as competências de leitura, a imagem é gradualmente

retirada do livro. Contudo, é importante que a criança continue a explorar a linguagem visual a par da verbal para saber ler e perceber as imagens que nos rodeiam. Ela será um futuro adulto numa sociedade onde a linguagem visual tem valor e está sempre presente no dia a dia, sendo necessário saber descodificar, interpretar, criticar e explorar as imagens.

Que o livro ilustrado/interativo seja a primeira galeria de arte que a criança visite como se refere a ilustradora Pacovská (2002[10]) ou um espaço, um ateliê onde experimente e expresse:

“Pronuncia la letra “A” en voz alta hasta que choque con las paredes que hay a tu alrededor.

Las letras: arquitectura del placer

Puedes considerar este libro de diferentes formas: como un libro clásico, hojeando sus páginas, como una escultura de papel por la que vas a pasear...

Puedes observar cada letra, tocarla, leerla en voz alta.... Cada una tiene su propio sonido, su propia forma y su propio color. Notarás sus diferencias cuando escuches el sonido de tu propia voz al pronunciarlas.

Estas es mi ciudad de papel, que la disfrutes!”

(Pacovská, 2008 [11])

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# CRASH, BANG, WALLOP!

Character Design Collaboration with Children and Undergraduate Students



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## Abstract

‘A Tale of Two Sporting Cities’, a community engagement project led by Glasgow Caledonian University’s Caledonian Club, offered a unique opportunity for undergraduate design students to collaborate with clients, end users and co-designers in a live project. Real life collaborative projects benefit undergraduate students by increasing employability<sup>1</sup> and contextualising their studies and design practice through active learning.

The project had a number of outcomes including the design and production of two books aimed at children. Primary school-children from two schools, one in Glasgow and one in London, participated in the character design, storylines and layout of the books as co-designers. Through recognition of the children as stakeholders, it was envisaged that their input to the design process would result in improved designs.

During the planned active learning experience, the children gained knowledge about the content of the books based on major sporting events taking place in their cities, potentially increasing community engagement and responsibility. Additionally, through involvement in this creative practice, children were introduced to several new routes to university and employment in line with Caledonian Club’s mission to raise educational aspirations of young people and their families.

Live and collaborative projects are beneficial for undergraduate design students<sup>2</sup> and the project involved a number of students at different levels of study. Topics such as character design, illustration and graphic design layout were covered in visual communication and layout modules. Subsequently, two graphic design students were selected to complete the final character designs,

## Keywords

children, character design, collaboration, curriculum integration, co-design, illustration, students, knowledge transfer.

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illustrations and layout of the books for print.

This paper describes the process of designing characters for the 'Crash, Bang, Wallop!' books involving schoolchildren as co-designers and end users, the students as designers and the Caledonian Club as client. The storywriting, layout and design of the final books is covered briefly. It also outlines the impact of this live project when integrated into the undergraduate curriculum.

## 1 · Introduction

Participation in Higher Education is widely recognised as beneficial for individuals and society as a whole<sup>6</sup>. GCU's Caledonian Club aims to widen participation in university level education by engaging with the community, especially schools, to increase the educational aspirations of children and their parents.

'A Tale of Two Sporting Cities' project was developed by the Glasgow and London branches of the Caledonian Club to meet these wider aims by engaging schoolchildren with the major sporting events taking place in their area through a number of activities.

The project's objectives were:

- to increase community engagement and responsibility;
- to increase awareness of and participation in sporting activities;
- to develop social links between the chosen areas;
- to increase awareness of wide range of subjects available at University.

The project intended to inspire the children to take pride in the regeneration of their local area, motivate their involvement with sport and increase their knowledge of the events taking place through participation in creative, sporting and social activities. This is in line with the Scottish Curriculum for Excellence<sup>7</sup>, as one of its major capacities is to enable young people to become responsible citizens and to participate responsibly in political, economic, social and cultural life.

Two schools in socially disadvantaged areas, School A from the East End of Glasgow and School B from the East End of London, were partnered in September 2011 and final year classes with children 10-12 years were chosen to participate. They visited each other's cities, local areas and schools over the course of the academic year with several preparatory class-based activities conducted prior to these visits.

One class-based activity centred on the design and production of children's books based on the major sporting events. The activity was planned as an action learning experience where the children participated in the creative activity of character design, story writing and layout design. This activity offered opportunities to involve the children as co-designers. However, to increase edu-

cational aspirations of the children and their awareness of University Level subjects available, the character and book designs were further developed by undergraduate students. The demonstration of the book production skills, such as Graphic Design and Illustration, enabled the children to better understand the professional processes involved.

Facilitators for the class-based activities included a drama leader, an artist and a design lecturer, all with prior experience of Caledonian Club projects. Supplementing these facilitators, paid student mentors were selected via a process of application and interview. These mentors, mainly studying at undergraduate level, were selected on their suitability to engage, motivate and supervise the schoolchildren throughout the year's project. Prior to delivery of the activity in each of the schools, the story concept of an alien landing at the school to coincide with the major sporting event was devised. Other characters, two schoolchildren and a schoolteacher were proposed to be included in both books. This ensured that the books would have parallel themes and characters. A short introduction was written by the drama facilitator to be replicated in both books with substitutions for specific places and names.

The creative activity took place over 2.5 days in each school during one week in October 2011 and was structured:

Day 1: Project introduction, team-building, creativity and motivational workshop led by the drama leader and project coordinator.

Day 2: Character Design led by artist and design lecturer  
Story writing with project coordinator and facilitators

Day 3: Layout Design ideas led by design lecturer and artist  
4 mentors took part in all parts of the activity at a ratio of approximately 1 mentor to every 7 children.

## 2 · Character Design Process

In the schools, the process of designing the character was facilitated by the GCU design lecturer and the artist. Each class was split into four groups of 6-8 children with a student mentor guiding each group throughout the activity. Initially, the class were reminded of the task to design the characters for the book (with potential for an animation) and introduced to the method being

used. As time was limited, each group was randomly assigned one of the four characters to design: schoolgirl, schoolboy, schoolteacher and alien.

### 2.1 · School A, Glasgow

Human Characters. To increase the permutations of the human character designs produced, templates were supplied to the children. The templates were simple grey dotted line diagrams to represent sections of a character:

the head, upper body, legs and feet. These ensured that the children drew to a specific size and the parts could be joined later.

Initially, each child was provided with one template sheet from the four available to design and colour. However, time allowed for the completion of further sheets.

**F1.** Student mentor works with group on school girl character design



Prior to this activity, no discussion took place to influence or decide on visual design of the human characters. The intended personality of the child characters was suggested as being 'friendly' and 'appealing', whilst making reference to some well known cartoon characters the children could relate to. 'Caring' and 'friendly' were used to describe the personality of the schoolteacher character.

The children were encouraged to create, through drawing and use of colour, several designs for the clothes and character's heads. To encourage this, they were prompted by the facilitators and mentors to consider different features for their designs through questions such as 'What hairstyle could the character have?', 'What is your favourite outfit?' and 'What colour of eyes/hair could the character have?'.

After a period of approximately 40 minutes, split page books were created to demonstrate to each group the different options available for their character. This method allowed several children's ideas to be included and increased their sense of involvement and ownership in the visual design.

The children were asked to select one character design to present to the class. When several options were under discussion or had not been fully resolved, the artist or the design lecturer facilitated the design by drawing the final character or parts of the character with further details added by the children. In some cases, options were selected by vote.

**F2.** Children's selected designs for human characters



Alien Characters Templates were not provided for the alien character, only blank sheets of paper. However, to encourage original designs, the artist provided a number of visual resources as inspiration including photographs of existing creatures, animals, insects and exotic plant material. This material was provided to ensure the children would not plagiarise alien characters from existing published sources.

As the storyline had not been established, emphasis was placed on visualising a 'friendly' personality for the alien as opposed to scary. In addition, the children were prompted to consider the alien's senses (sight, smell, etc.) and the visualisation these features. The children designed various body parts for the alien based on the source material provided. This group opted to vote on the various body parts to select a final character. As the body parts had been drawn in various sizes on the blank sheets, the artist sketched an outline of the final design for presentation to the class.

Observations During this process, some observations were noted:

- Some children were reluctant to draw, proposing that another pupil was 'better than me' or 'I'm not good at drawing'
- There was some evidence of copying within groups
- Decisions were generally democratic and agreed upon quickly
- When presented with the final characters at the end of the session, children appeared positive with their designs with little or no dissent.

## 2.2 · School B, London

The character design activity in School B, London took place 2 days after the Glasgow one. Similar methods were used with some adjustments based on observations noted. Changes to the process are outlined.

Human Characters A similar method for designing the human characters was followed in School B. However, visual material demonstrating cartoon styles of facial features was provided. In School A, there was some evidence of copying designs and it was hoped that the provision of visual material at this stage might result in greater variety of designs and assist any children who did not feel confident in their drawing skills.

**F3.** Student mentors present final characters to the class.



Alien Character A similar method used in School B. Children drew various body parts for the alien based on visual material provided.

Final Character Design Selection To ensure the characters were significantly different to School A's, the facilitators opted to select the final character designs on behalf of the groups. At this stage, some feedback on the selected designs was given and minor adjustments made to the characters.



#### Observations

- Some children opted to trace facial features, less confident children appeared to enjoy this process and the results achieved
- The children's reaction to the final character designs was positive despite having less input in the decision-making process

### 3 · Story writing & Layout Design Processes

**Story writing** The process was similar in both schools. The children were split into 4 groups to write separate parts of the story based on topics. In many groups, the children were subdivided into pairs to discuss and write stories based on the four 'chapters' of the story.

Facilitators and mentors encouraged the children to come up with many ideas with the proviso that they would need to be edited by project coordinator at later date.

**Layout Design** Layout design was conducted in a similar manner in both schools. A brief explanation of layout design took place at the start of the activity introducing the roles of graphic designers and illustrators. The children worked in groups filling in A2 blank sheets which acted as pages of the book by cutting and pasting the text of the story; making suggestions for photographs; sketching ideas for illustrations; drawing comic strips of the characters in action; pasting characters drawings; and completing fact boxes to supplement the story.

A mock up of each book was created to help the children to visualise their ideas and understand the process of book design.

### 4 · Curriculum Integration

Following the school based activity, the project was integrated into the curriculum of undergraduate design students. 50 students



**F4.** Progression of character design from children's idea through student visuals to final version

taking a Level 1 module on Visual Communication were assigned either characters or illustrations for the books to generate ideas.

Within a Level 2 graphic design layout module 22 students refined the children's ideas into finished layouts as part of a module assessment. Each student developed at least 4 pages of the book in their own style. Selected layouts were presented to the client for consideration.

### 5 · Production of the Final Books

Following presentations of the layout designs to the client and on recommendation of the lecturer, two Level 2 students were selected to complete the final books. One student developed the characters to final stage referring to the children's initial ideas and those of the level 1 students (Figure 4).

The second student worked on the layout of the final books. The initial layout designs by the children were referred to but not followed closely. Instead, a consistent style was established for both books with several identical layouts and illustrations. This minimised the time spent on the final layouts and ensured the books were produced within the time frame of the project.

Presentations and discussion with Caledonian Club staff and the design lecturer throughout this final stage ensured a realistic designer-client situation for the students involved. Before the books were complete, the children were presented with the character designs after transformation from their initial drawings to near professional standard and the reaction to these was very positive.

**F5 e 6.** Front page and page 2 of final book for School A



## 6 • Discussion

The process of designing the characters with children within restricted time limits resulted in a successful outcome. The children engaged willingly in the classroom activities and achieved the target of selecting initial character designs or creating options for selection. Improvements could have been made to the template designs to ensure that they fitted together into split page books in more convenient way. Guidelines to ensure that the alien body parts were drawn to a similar scale may have increased the number of options conceived during the class.

It may have been advantageous to complete the story or establish more about the personalities and features of the characters prior to the visual design. However, the children reacted very positively to the characters on completion.

The integration of the project with the curriculum had limited success. Due to the constraints of module delivery and assessment, little time was spent on the ideas generation stage with the Level 1 students. As they created work in a wide range of styles, their work could not be used in the final book without further adaptation. However, the students generally found it easier to make sense of the task as a live project and their ideas were useful for the Level 2 students to refine.

The layout of the books with Level 2 students was reasonably successful but it became apparent that it was easier for one student to complete the book in order to meet the production deadline. Several layout ideas were considered and it was a successful for ideas generation and as a method to teach layout design.

## Summary

The production of the 'Crash, Bang, Wallop!' books as part of 'A Tale of Two Sporting Cities' project offered a range of useful opportunities.

Throughout this activity, the children gained knowledge and experience of University level creative and design subjects such as animation, illustration and graphic design. It was anticipated that by increasing potential career choices, educational aspirations may be raised although this can only be measured in a longitudinal study.

Integrating the project within the undergraduate curriculum

posed some challenges, mainly with time constraints of the project and managing the number of students involved. However, the benefits outweighed the negatives and the students gained valuable experience of working on a live project.

The project evolved over the academic year and there was a need to adapt to ensure the strict deadline was met whilst still adding benefit to the curriculum and the students involved.

In future, it is hoped to integrate the project into teaching and learning within an animation module by animating the characters and using the story as a basis for storyboarding techniques.

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# A NEW PERSPECTIVE ON THE FIRST JAPANESE ANIMATION



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## Abstract

Recent research on the origins of Japanese animation shows that the first anime actually dated from the 1900s decade, a date which introduces questions about certain key aspects of animation history and traditional animation. This article reviews the literature on the early Japanese animation and suggests that this genuine style of animation could actually have an origin on its own.

## Keywords

Japanese animation,  
Osamu Tezuka, Anime,  
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## 1 • Introduction

In the same way that all forms of art have a history, in the special case of animation there are many stories that are still being investigated. One of them corresponds to the particular model of Japanese animation. In spite of its indisputable worldwide expansion, the origin of Japanese animation can still arouse some relevant controversy [1], especially if this involves changing the date of certain milestones that have been considered unquestionable in animation history.

This article carries out a review of recent discoveries about the origins of Japanese animation, as well as a description of its earliest animation just after 1900, which provides valuable information despite the found material is very scarce and quite deteriorated.

The article is structured into two main sections. The first one intends to establish the origin of Japanese animation, not yet sufficiently clarified or classified by Western historical publications. In the second section, the distinctive contributions of the film animation pioneers, as presently dated and recorded, are contrasted with recent findings of cinematographic archeology made in Japan, which could challenge the stylistic hegemony of Western animation accepted for decades.

## 2 • The Origins of Japanese Animation

Nowadays, numerous writings related to the history of Japanese animation anime fail to locate its origin in time. This is because until recently it was accepted, especially in the West, that the first known anime was created in 1963 by the Japanese cartoon artist Osamu Tezuka: Astroboy [2].

Tezuka undoubtedly gave rise to the revival of a new era of animation, whose esthetic was inherited from the manga, and Astroboy was a successful television series that boosted tremendously Japanese animation industry further than its country of origin. But it was not the beginning, neither the first anime nor the first animated series in any case the first series with 30 minutes span episodes, since the title of the first anime series could correspond to the production Mitsuru no Hannashi: The Third Blood, a special composed of three half-hour episodes each, directed by

Keiko Kozonoe that began airing three years before Astroboy, in 1960 [3, 4].

There are actually well-known classics that could well compete for the rank of first anime, such as Hakuja Den (The Panda and the Magic Serpent, 1958) (Fig.1) and Shōnen Sarutobi Sasuke (The Magic Boy, 1959) by Taiji Yabushita (Fig.2), which had great success in Japan and served as an inspiration to other very valued artists as Hayao Miyazaki. It is also well known that Toei Animation Co. Ltd. was founded in 1956, a few years before Kozonoe production (1960). In order to compete with American animation studios, Toei Animation Company surprised the audience with animated Japanese stories with “cell animation” –North American’s own animation technique of drawing on acetate–, and so by Yasuji Mori, Toei Company gave birth in May 1957 to his first



**F1.** Left.: Hakuja Den by Taiji Yabushita (Panda and the White Snake, 1958). It is the first Japanese animated feature in color. It was one of the movies that prompted the master Hayao Miyazaki to engage the world of animation.

anime: Koneko no Rakugaki (Doodling Kitty). And here comes the seductive conflict, because the date of this animation is previous to Astroboy, at times in the West it has been located Doodling Kitty as the first Japanese animated series, although Doodling Kitty never was really released successively by television and it did not last 30 minutes, it was just a little short animation about 13 minutes long where a naughty kitten appears drawing graffiti on a wall.

Subsequent to these animations are: first, Instant History (1961), second, Otogi Manga Calendar, both of Ryuichi Yokoyama, which began airing in 1962 and ended two years later actually these two animations occurred in two different seasons of the same series and, thirdly, the groundbreaking Tetsuwan Atom (Mighty Atom or Astroboy) by Osamu Tezuka, which began airing on Japanese TV on January 1, 1963 and remained on air until December 31, 1966. This recreation of the story of Pinocchio,

**F2.** Right: Shonen Sarutobi Sasuke by Taiji Yabushita (The Magic Boy, 1959). It shows the evolution of the entertainers with respect to the first production: more colorful, more action in the animation, and use the new widescreen format.

**F3.** Left: Momotaro Umi no Shinpei by Mitsuyo Seo (Momotaro's Gods-Blessed Sea Warriors, 1945). It is considered the first Japanese animated feature with audio. A propaganda and military purposes, the film was commissioned by the Ministry of the Japanese Navy.

**F4.** Right: Saru-Kani Gassen by Seitaro Kitayama (Monkey-Crab Battle, 1917).



transferred to a futuristic context, marked a turning point in the history of anime: Tezuka brought to the still recent Nippon animation industry an impetus that has hardly been repeated since, and from which a new generation of animators would be born, who produced entertainment for both cinema and television.

But, if the adventures of this robot boy have nothing to do with the first anime, then who is the responsible of this honorary title? The first animated feature film with audio came out in April 1945, exported to Western countries, titled Momotaro umi no shinpei by Mitsuyo Seo (Momotaro's Gods-Blessed Sea Warriors) (Fig.3), and it seems logical to think that in order to find the first animated film we should still go back a few years, because previous to the realization of a feature it is likely to first develop a multitude of experiments and tests. Therefore, in Japan as in other countries like USA, Russia, Germany or France, the history of Japanese animation began in the early twentieth century with the creation of a series of short films, and 1917 is recognized as a key date of the beginning of the loom for the first Nipponese animators, as were Oten Shimokawa, Jun'ichi Kouchi or Seitaro Kitayama, who filmed Saru-Kani Gassen (Monkey-Crab Battle) [5] (Fig.4), a curious parable starring these two animals that was based on a Japanese folk theme –as is also the case with many later animes, e.g. Dragon Ball, 1986–[3].

### 3 · Reviewing the Pioneers of Animation

The date of 1917 as the source of the first Japanese animated film may seem late, especially if we compare it to the pioneering contributions of French artists such as Émile Cohl, or Americans as James Stuart Blackton and Windsor McCay, whose most important contributions took place between 1906 and 1914. However 1917 is not so late if we compare it to the beginning of animation in other countries such as Spain whose first cartoon has the same

date: El toro fenómeno (The phenomenon bull), by the cartoonist Fernando Marco, and it is still possible to demonstrate that the source of Japanese animation is almost contemporary with the mentioned pioneers, as we will show below.

The history of animation is a living process, and its record is in perpetual change. And often there are misunderstandings that distort the overall view of the existing contributions. As with Tezuka in Japan and the resulting confusion about the origin of Japanese animation, it is true that Winsor McCay was a crucial inspiration for earlier generations of animators: his characters were endowed with his own personality and he was a pioneer in the use of the key-frame procedure, inherent in classical animation. This, coupled with that he was the first to self-portrait in his films, somehow led many historians to erroneously consider McCay as the father of animation and Gertie the Dinosaur (1914) as the first film in animation history [6].

However, it should here be recalled that the first film by Windsor McCay, Little Nemo, half animation half documentary, dates from 1911. And prior to this are Fantasmagorie (1908) by Émile Cohl the first cartoon to be registered drawing by drawing, or the technical and narratives inputs of James Stuart Blackton pioneer of animation with drawing, cuts and stop-motion, with films like Humorous Phases of Funny Faces (1906) and The Haunted House (1907). We could still allude even more, citing the Russian Ladislav Starewicz, whose first animation film with articulated puppets and with a complex storyline —Miest Kinomatograficheskovo Operatora (The Cameraman's Revenge)— dating from about 1912. Along with them, or rather behind them, we must consider a number of lost pioneers, either because their film career was sporadic, or because their films were too thinly spread, as today we have to mention the choreographer and director of puppets animation Alexander Shiryaev, a contemporary of Starewicz, whose work can be dated no less than between 1906 and 1909 [7].

While this outline could be found in the current literature about the history of animation, it is clear that it does not end the search for the first animated film, making more relevant the final revelation of this article: the recent discovery that the first Japanese animation actually dates from the 1900s, and may well be

the first cartoon film in history.

The finding, made in 2005, discloses photo frames found inside a house in Kyoto in addition to 3 projectors and 10 films about cinema history (jidai-geki) and animated shorts [8], which not only invites us to the question of the first animation film, but also, and perhaps more importantly as noted by Clements and McCarthy, if the Japanese were the first to film consecutive drawings, as Cohl did in *Fantasmagorie* [3].

The material found in Kyoto, is actually quite rare and mostly in very unfortunate state, was meticulously investigated by Natsuki Matsumoto, iconography expert at the University of Arts of Osaka, together with the animation historian Nobuyuki Tsugata. The study of these researchers on production techniques of the frames, the kind of material used, and taking as reference the manufacture date of the projector discovered next to the strip of animation, confirms that the film was made “between 1907 and 1911” about ten years before the as yet considered oldest Japanese animation (*Monkey-Crab Battle*, 1917) . This would put Japanese animation in the late Meiji Era (1868-1912), a time when there were hardly any movie theaters, but where the wealthy people could enjoy the first moving images thanks to home projectors [9].

The film, by unknown authors, has duration of three seconds if it is projected at 16 frames per second and has four side holes which confirm that it was filmed in 35 mm chronologically possible because the first 35mm film was made in 1889 by Hannibal Goodwin . It consists of a celluloid material strip on which 50 images are directly drawn and where we can see a line drawings of a boy dressed in a sailor uniform, simulating a turn towards the spectator, taking his hat off and waving his hand, along with an eastern text at the top, specifically written in kanji, 活动写真 (“Katsudo shashin” moving picture) (Fig. 5).

Finally, we highlight the importance of the fact that the animation is done on a 35mm film, because the Japanese animators Jun'ichi Kouchi (*Namakura gatana*, 1917) and Seitaro Kitayama (*Urashima Taro*, 1918) are historically considered to be the pioneers in the use of this material. Also, if we consider that the official opening of the invention of the Lumière brothers was in December 1895 and that a year later 200 filming devices were

**F5.** Fragment of the frames found in Kyoto in 2005, as was published in the Japanese magazine *Asashi Journal*.



manufactured for distribution around the world U.S., India, Australia and of course Japan , it is quite striking how quickly the Japanese began making their own creations.

If the concept of anime does not strictly lead to animation made in the years after Tezuka (1963), meaning an animation style of particular aesthetic and narrative characteristics, but to a wider perception of what is Japanese animation, it could be established that the first anime title from history is, in fact, this cute little sailor whose father is unknown. But the date to which this movie has been assigned about 1907 raises not only doubts, as pointed Clements y McCarthy in *The Anime Encyclopedia: A Guide to Japanese Animation since 1917* where they were tempted to change the book title, but finally decided to remain loyal to the first edition to the emergence of new researches on this discovery [3]. It also raises questions about the stylistic U.S. hegemony on drawn animation, because this film was made before the first animations produced in the U.S. and France, between 1907 and 1911. This was emphasized by Nobuyuki Tsugata in an interview for the Japanese newspaper *Asashi*: “Strictly speaking, it is controversial that the newly found film should even be called animation in the contemporary sense... but this is nevertheless a big discovery, that there were animated motion pictures during the Meiji Era” [10].

## 4 • Conclusions

This paper describes a striking discovery of film archeology made in Japan, inviting us to introduce a reasonable doubt about the technical dominance that occurs in the animation after the contributions of the Fleischer brothers in the U.S., and especially in realistic style since Disney becomes a feature film factory.

The dating of the first Japanese animation film, able to compete in antiquity with contributions of the undisputed pioneers Émile Cohl and James Stuart Blackton, reinforces the fact that a country like Japan ends up surprising with original contributions and seducing with their originality. While in its beginnings the Japanese animation lacked a sustained growth and a stylistic personality until its consolidation by Tezuka who forged what is now called anime which, in his hands, was nothing but a fight against Disney using his own weapons: solid drawing, acetate animation, use of classical music, etc. , it ended up imposing its

own style to the point that anime productions are no longer performed in Japan only: animators who make anime series for and in the West such as Code Lyoko or Ben 10 or use the surrealist iconography of Japanese mythology as Adventure Time are, today, legion.

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# HISTORICAL AND CONCEPTUAL LANDSCAPE OF THE CHARACTER



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## Abstract

This paper was developed with the intention of broadly demonstrating the complexity of the area known recently as character development, as a creative process methods and implementation. It searches the understanding of the character itself, its place in the narrative and its reception by the reader or target audience. It is a multidisciplinary tool that faces a multitude of challenges from an increasingly demanding public and with specific goals in mind, and yet it also gives us valuable insight over how we interact with one another and the world around us, teaching us how to transfer such knowledge into fiction promoting empathic bonds between the reader and the characters. The human tendency to create is limitless and as old as mankind itself, we create, recreate and reinterpret and then populate such tales with believable characters from who we learn, and experience events and tales that shape our very lives.

## Keywords

Character concept, The role of a character, Character development, Development of empathic bonds, Principle of credibility in fiction

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## Historical and Conceptual landscape of the Character

The purpose of this paper is to take a broad look at the concepts, tools and implementations that take place in the creative process known as character development, as well as exemplifying its application on several areas.

Two of the most important elements for the development of a narrative are characters and an action. Even if it's a tale about a mountain and a rock that tumbles down its side, the mountain and the rock are the characters and the event, the driving force behind the story.

As such, convenience dictates that we take a look at the original concept of character. The character and the story it belongs to, can be historical (present or past) or fiction (imaginary, cultural), as is the case of myths. The term itself has its origin in the Greek work *prósopon* (which means mask). This designation was originally used to describe the mouth orifice of the mask (from *maschera*, deceiving look) worn by the actor, from which the voice of the character would be emitted. The idea that there existed a person beyond the mask and the character it represented was described by Epictetus [1] «Remember that here you are but an actor from a drama, which will be as brief or as long according to the will of the poet. And if it pleases him that you become a vagrant, take effort to do it properly...For it is up to you to act the character that you are fated, and up to another belongs the right to chose it». In Rome the concept evolved, and the term *persona* became synonymous with the character in a dramatic play (in the genres of comedy and tragedy) and the actor that took upon himself to take the role.

The western concept of character finds itself firmly anchored in Greek theatre, and it in its turn, in religious and social pagan rites and mythology. Myths can be defined as, lasting mental realities, as they confer a means by which cultural identity perpetuates itself. Roland Barthes, in his work *Mythologies* [2], underlines the importance of the myth as a tool of human culture «What is a myth today? I shall, for now, give a very simple answer, which is in accordance with its etymology: the myth is a language» (p.181) The myth finds itself eternally suited for its time, in order to understand it in its fullness it is necessary to understand its time.

Historical events and the characters that shaped them, and where themselves shaped by it, are not forgotten but find themselves in a sea of metaphor and allegory, developed over generations of oral transmission and repetition until reaching us in the manner which is known to us.

The events described where the characters navigate, can be as simple or as grand as needed. Although initially transmitted orally, such events endure due to the feelings they create and awake thru the description of an uncommon world which is strangely recognizable, as Epictetus said [1] «Men are not disturbed by things themselves, but by the idea of them».

This would be an opportune moment to quote Edith Hamilton[1] in regards to mythology, «therein lies the fact that they make us go back ages, to a world still young, where the individual is still radically connected to the land [...] in a manner completely different from which we are accustomed today. We are led to believe that in the age these stories started, there was little to no distinction between reality and the unreal» (p. 11). As such it's understandable that's the time of the myth find itself in an age before the written word, creating an added difficulty to the development of an organized narrative, allowing it to be easily recreated, altered, and even contaminated by other myths, cultures, ideologies and ethics.

From ancient mythos to recent heroes, we can state that the conflicts and issues in which mankind saw itself can be accurately depicted by the fiction that followed such times and events. An example of this are the psychological traits attributed to animals in totemic cultures, as are the archetypes of the gods and heroes in Greek and Persian mythos (one of the most ancient of these tales is the adventures of Gilgamesh, a mythological hero from Sumeria), we can easily find the heritage of such characters in our own time, from movies to videogames, comic books and literature. As such one can state that character development is a practice as ancient as humanity itself.

And yet what is it that grants our childhood and adolescent heroes the aura they have in our imagination? It is quite unlikely it happened by mere chance, as we are confronted everyday with iconic figures that bring us into their universes touching us in a deep and meaningful way, so much we remember there many



qualities, flaws, and adventures we shared by there side.

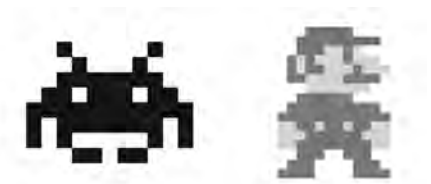
Character development, and its subsequent recognition as a phenomenon, goes thru a set number of actions, these include the development of a backstory, personality and appearance of the characters, ideally these characteristics work and complement each other to create a character which is easily recognizable and psychologically unique in a world settled by other characters with their own motivations, fears and objectives.

There are several ways of casting the first stone as far as character development goes, almost as many as authors working to reach that objective. If the exact moment of conception can be somewhat imprecise, in terms of methodology a good place to start would be the creation of a backstory, although further ahead it will be exemplified that it is not an essential step (as many world famous characters have no backstory or only acquired one later in their existence). This element can be used to determine several key components, such as the physical and psychological description of the character as well as details of how it related with its world and others, and most importantly recognition by the reader of the goals and motivations the character aims for or seeks. It is thru the union of these elements with a carefully crafted visual design that we achieve the right character for the project at hand.

A character is, much like a real person, a complex amalgamation of experiences. Both are influenced by their surrounding environment and by who and what they created bonds with. Even if it's not entirely essential to promote a character to such a high degree of contextualization, this is nonetheless a very useful tool, for it brings us close to the character allowing us to relate to the means by which the character acquired its individuality. Thru its personal traits we interpret its eccentricities and peculiarity's allowing its tailored behaviour to sound unique.

There were, however, an entire generation of characters that were devoid of backstory, and whose visual charisma was only as complex as the eight bits that comprised it would allow: historical speaking the history of video games is a very recent matter, but as such it allows us a very particular glimpse into the methods and solutions of character development. Pacman, the UFO's in Space Invaders and even Super Mário himself (see Fig.1) are all examples of successful character design in this particular area,

feeling only much later the need acquire a greater complexity. As far as backstory and inner life goes these traits only appeared after they were a commercial hit in order to respond to a broader and increasingly demanding audience. The evolution of the genre pushed for a deeper and more complex kind of character, that these should be charismatic, with clear motivations and a positive personality even when expressing known archetypes or straying from cultural landmarks (both in terms of visual makeup and behavior), this allowed a deeper connection from the user with the characters and their world in much the same way had always happened in literature and in other areas of artistic expression.



**F1.** 8bit era characters  
(Pacman, Space invader, Super Mário).

The transition from 2D sprites to 3D models force some adjustments to the overall visual design of several characters, amongst the most popular transitions we can find, Super Mário, Sonic and Link (see Fig. 2). This was more than a mere graphical transition, it was above all, a technological transition which allowed the developers the use of several narrative tools which were until then reserved for cinema, and as such came the opportunity to reinterpret these same old characters in a new stage, for a new generation of users. These same characters have demonstrated time and time again their importance for the overall success of their individual project, be it video games, comic books, movies, among others. In the video game industry in particular the success of a new console does not depend as much on the technological difference between competitors but in the library of games that they have. Within these game library's specific series have a deep impact in consumer sales due to a loyal fanbase built over the years, this becomes an important element in the decision to acquire a new console: an example of this occurred in 1997, when

several Nintendo consumers acquired Sony consoles as a direct consequence of platform transition made by Square (Square-Enix) and there acclaimed Final Fantasy series, a series long recognized



F2. Link, Legend of  
Zelda, visual evolution  
of the character.

by strong narrative and compelling characters [3].

The continuous success of a character, is as such, its survival, and finds itself dependant on its progressive evolution and if need be redesign: even iconic figures such as Super Man and Spider man, Super Mario and Sonic where systematically reinvented without sacrificing the essential elements that defined them, enjoying as such not only the success they acquired over the years but granting a continuous growth and replenishment of their fan bases by new generations adapting as needed to new times and new challenges.

The coherent development of a visual identity is one of the most identifiable elements of character development and is what allows us to easily identify all the characters previously mentioned. Visual elements are usually the first noticed by the general public and as such becomes a determinate factor in picking consumer interest in those characters, in this short period of time a complex process of evaluation occurs where recognizable elements play a key role.

But not all characters need to reinvent themselves, especially those who do not depend on a constant refreshment of its consumer base, some known examples of such characters are Tintin and Blake and Mortimer, there success comes from managing to keep much of their consumer loyalty generated in the younger years of their readers who carry it on until there adult lives. Such readers are still nowadays its main readers and consumers of such works, in much the same way the novels of Jules Verne have a special place in the previous generation's memory [4] (p.12).

This achievement is possible thru character coherence assuring a familiarity of situations from one book to another, allowing the reader to predict, from a position of relative comfort, the attitudes and reactions of the characters. Unexpected situations can arise when these same characters are placed in a situation out of there comfort zone, but usually we are confronted by the same character roster with the same roles within the narration, being represented in the same visual style and being exposed to the same eerily similar situations, and yet there popularity does not seem to be affected. This occurs mostly due to the role visual and character recognition plays a massive role. Algirdas Julien Greimas dedicated a lot of its work to the study and understanding of the mechanisms within the myth and legends, as well as the relationships between characters within a story and its specific roles within the myth, having been placed in the following roles:

The Actant-Subject and the Actant-Object of Action.

The Actant-Sender and the Actant-Receiver of Information

The Actant-Supporter and the Actant-Oppositionist  
of Volition.

The works of Greimas would become essential to the understanding the roles and rules that characters tend to follow within a narrative and are still to this day object of study. The importance of secondary characters should not be underestimated, they too actants (those you act in the narrative, can be other beings things or forces that participate in the action), either in supporting roles or as opposition to the main character as the antagonist. The actant itself can be a more or less heroic character, alone or accompanied. These connections find themselves supported in a system which organizes the places and parts specific characters and traits have in the structure of the narrative, allowing its progressive complexity and advance.

The choice for a representative style does not imply necessarily that it is realistic. Even when taken into account the age old tendency for conformation with the real, a tendency that only recently was shaken of (historically speaking). As previously noted, the visual style thru which the world and the characters are representing takes a central role in the success of any single character design, one of the details that complements reader familiarity is the use of recognizable elements, such as clothes,

exterior locations and architectural spaces among others, such elements help the universe become more lifelike. Using the work of Hergé as an example, Tintin's world is our world, one can easily recognize several elements which are very close to us.

Strangely enough the characters themselves are far from being called realistic, they are close to caricatures of the archetypes and stereotypes they represent, Captain Haddock with his nautical and seafaring ways, Professor Tournesol with his distracted and clumsy personality, the brothers Dupont and Dupond overly polite and at the same time incompetent, the list goes on, this raises the question of how Hergé was capable of inserting such caricatured characters in such a coherent and recognizable universe.

The answer can be found in the style. Hergé's characters although visually strange are represented according to the same rules applied in the representation of the world they belong in, the same scale, the same line, creating a style with specific guides and rules solving as such eventual coherency problems that might arise [4]. The use of colour when present, can be a useful tool in making the overall world and characters more realistic or strange according to the authors need, colour and style are essential when determining the tone of the story and the world it represents.

Contemporary super hero comics (Marvel, DC, Image, among others) even when confronting us with strange and wonderful phenomena and characters tries to keep a lot of real world references in order to enforce suspension of disbelief. The colors of the cloths, characters and buildings are erringly similar to those we come across in any given day, granting added strength to the illusion, the color itself takes a special attention in a world populated with bright colored spandex wielding heroes, as the overall tone tries to keep coherency between such characters and a realistic rendered universe.

«The realism of the details authenticates fiction» [4] (p.137). There is no coincidence that most children's illustrated books sport bright and strong colors instead of neutral pastels with which we share most of our day to day life, this happens because the goal is to achieve a piece of fiction with a different tone and energy specifically targeted to children.

No one seems to question the fact that Tintin, while being a young journalist, is capable of such incredible achievements as go-

ing to the moon and scaling the Himalayans, or discover long lost civilizations and rescue treasure from sunken ships (among other adventures), most real life journalists won't go to such lengths for a story, but as long as we are willing to suspend our disbelief from the moment we open the book, until the moment we close it we can share such adventures with them. The choice of how to present the characters and the world they belong to are essential in strengthening the bond with the reader «the narrative technique and the graphical technique join together to solve the questions of continuity between the plausible and the imaginary» [4] (p.137).

It is thru the representation of recognizable elements that we can anchor the imaginary by borrowing the necessary plausibility and using it in character design, or in opposition by the use of fantastic elements in realistic universes where it adds a sense of mystery and fantasy to an otherwise lackluster world. One of the reasons we feel fascinated by different cultures is precisely that confrontation with the strange and unknown, that same mechanism can be used as a solid base with which to transport the readers into the narrative and make them experience a world, events and experiences.

When used in times different from our own, weather the past or the future the same principles of credibility apply, preferably backup with appropriate research. Such universes possess the same richness of conflict and characters that one can find in the contemporary world, many times mirroring many of the same issues. Some of the examples of this tool we can find are Astérix, Lucky Luke and Conan. However these representations do not need to be historical you scientifically correct, they only need to be coherent with the general perception of the target audience. In Tintin, Otokar's Scepter, the story unfolds in a fictitious nation created by Hergé which is based on existing nations, granting them detailed popular traditions and habits, as such the nation of the black pelican becomes a plausible stage for the adventures of the young journalist [4] (p. 143).

The world of Hyboria created by Robert E. Howard (Conan the Barbarian) uses the same method, creating a world that temporally finds itself between the ice ages. He chose to use geography reminiscent of our own planet in a time where the land was still united in a giant mass (Pangaea), he inhabited the world with

men who are ancestral versions of past civilizations, the Roman Empire, the Bretons, Egyptians (Aquilonia, Cimmeria and Stygia, respectively), having had the care of gifting those civilizations traits which make them easy identifiable with their real world counterparts. There are many examples such as these in fiction being attesting to the success of this practice, credibility in fiction is as such an element which should be seriously taken into consideration when developing fiction and the characters that inhabit it, being a technique widely used In modern times from movies to literature and video games. By imposing upon fiction systems based on rules reminiscent of our own the authors can bridge fiction and reality.

In the words of Mies van der Rohe «less is more», although originally used in the context of minimalistic architecture, it was adopted by numerous other areas including design. In the context of character design it should not be used as synonymous that simple characters work better than complex ones, but instead, that when they are distilled of all their exterior complexity the end result should be a small but strong number of essential characteristics easily perceptible (but not necessarily easily understandable) by the reader.

There are works of fiction that find themselves heavily based on historical fact, character and context. Such works tend to be supported by a lot of research further enriched by the imagination of the author. Movies such as *Gladiator*, and *Kingdom of Heaven* (both from Ridley Scott), or the strategy video game series *Total War* (from Sega) demonstrate the fruits of such research in every detail.

Another factor that exemplifies the importance of character recognition within a world by the reader is the quickness with which we detect the part played by each character, as well as what to expect from them by their appearance and overall attitude. The protagonists by their many qualities attract us to their side, and by opposition all who would harm or wish them harm draw our discontent and are qualified as antagonists.

Usually these genre follows the travels of the protagonists as they overcome obstacles and challenges and over these adventures the reader bonds with the characters, living thru them and experiencing their world. The qualities of the protagonists tend

to be systematically underlined either by dialogue or action, and even by their name as it has quite a lot of expectations associated with it.

*“What’s in a name? That which we call a rose  
By any other name would smell as sweet.”  
William Shakespeare [5]*

Names have a bigger impact than what is many times attributed; they can awake intuitions feelings and concepts bearing a particular meaning. Characters such as Super Man, Francis Blake or Tintin, share one attribute among them: their names are loaded with meaning underlying characteristics and attributes, and as such should never be picked recklessly. Names help define a character's personality and settle the difference between the protagonists, antagonists, and other characters. Another component to settling the difference between the protagonists and the remaining characters is the way the dress and look: for motives of visual coherence, characters' clothes say a lot about it and its role. Clothes and accessories can also fit other roles within the narrative. An example of this is the cliché known as Chekhov's Gun [6] «One must not put a loaded rifle on a stage if no one is thinking of firing it», (letter from Anton Chekhov to Aleksandr Semenovitch Lazarev), although one should pay attention to all objects some times unnecessary elements will only clutter the narrative while others are essential to its progression, as such care should be placed in determining which is which when developing a character's attire or layout.

Such differences between characters work as an essential component in developing the conflict inhering in most narratives, they occupy many times center stage in the relationships between the protagonists and the antagonists. In the areas of illustration and children's animation, the antagonists tend to be older than the protagonists [4] (p. 156). In this we can find an analogy between the youthful vigor in opposition to the sedentary cynicism of the older ages (the cliché dark lord sitting on his tower), it's also representative of a child's predisposition to believe and accept alternative universes and perceptions of reality. This is a theme amply worked by Hayao Miyazaki, in movies such as *Spirited*

Away, My Neighbour Totoro, and Ponyo. When confronted with magical and strange events the children's initial response is one of acceptance (sooner rather than later), followed by an inquisitive outlook; on the other hand, the adults will often refuse to see, let alone acknowledge such events, being necessary the intervention of the protagonist to convince them to accept such truths.

The antagonists, besides being older, will also begin the story in a position of power and advantaged compared to the protagonist, who must fight and overcome all manner of increasingly difficult challenges with the end objective to be able to face and defeat the antagonist (the quest). The difficulties and the tribulations enhance their struggle; as a consequence a protagonist is only as large as his antagonist and the obstacles that he faces.

Important to the antagonist is also the presence of his minions, the muscle of his will, and it is thru them that much of the contact with the protagonists occur. The minions are normally represented with very few individual characteristics, undervaluing them in face of the protagonist and avoiding that the reader pays excessive attention to them.

The sheer number of minions set against the main characters enhances the fight and gives the protagonist the center stage, from a sociological point of view, it can represent the fight of the individual against the crushing strength of an oppressive collectivism, or as a moral affirmation of the elevation of the effort of good against the size and the easy route of evil.

Character development is a methodology in constant evolution and so will it continue as long as it keeps up with the advances of several fields of knowledge that constitute the binding pillars of this discipline (psychology, sociology marketing, design), from animation, and development and advances in graphical techniques, methods and esthetics. It is also essential the understanding the concept of the character itself, its origins literary and historical, and its transitions into the modern mediums such as cinema and video games, to understand from where it came to know where it might further go. Like all areas of graphical development it finds itself permanently bound to the changes of perceptions and tastes of the society in which it finds itself and is as such an eternally contemporary subject.

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# ANIMAÇÃO HÍBRIDA INTERACTIVA



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## Abstract

Neste artigo descrevemos um sistema totalmente implementado que permite gerar animação 2d em tempo real. Este sistema é responsável pela produção de um programa de televisão intitulado “A Noite do Óscar”, exibido ao sábado à noite, na RTP2. Este programa de entretenimento consiste num apresentador virtual que entrevista, em jeito de talk-show, um convidado real. Todas as personagens e animações foram criadas pelo primeiro autor deste artigo. Analisamos o sistema, e procuramos ainda compreender o design da personagem, a linguagem da animação e a simbiose resultante entre animação, imagem real e interactividade. O estudo deste caso contribui para uma investigação de uma maior escala, que culminará, a curto prazo, no desenvolvimento de um novo sistema de animação interactiva.

## Keywords

Animação, animação de personagens, interactividade, virtual.

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## 1 · Introdução

Há mais de duas décadas que diversos académicos se debruçam sobre o desenvolvimento de agentes virtuais interactivos credíveis (Cassel, 1998), (N. Thalmann, and D. Thalmann, 1994), (E. André, T. Rist, and J. Miller 1997), (T. Noma, N. Badler, and L. Zhao, 2000), ganhando cada vez mais relevância junto das indústrias de entretenimento. Muito cedo se percebeu a importância de personagens virtuais serem capazes de ir mais além nos aspectos relacionados com a jogabilidade, e que conseguissem comunicar e relacionarem-se emocionalmente com o público ou jogador [1]. Em televisão, um dos exemplos mais bem sucedidos, é o divertido programa “The Nelly Nut Show” que estreou na “Children BBC TV”, nos princípios de 2000. O sucesso desta série pode ser quantificado pelo número de países onde foi transmitida, inclusive em Portugal, intitulada de “Rita Catita e o Ursinho Ups”. Este programa de televisão foi criado com uma primeira versão de um sistema apelidado de “Cartoon Broadcast System (CBS)”, alcançando óptimos resultados junto do público infantil. O programa apresentava uma menina desajeitada e cheia de energia que na companhia do seu urso de peluche — criados num estilo “cartoon” — partilhavam conversas ao vivo com crianças reais. Estas, a partir da comodidade das suas casas, competiam entre elas, através de jogos controlados pelas teclas do telefone.

F1. Programa de Televisão “The Nelly Nut Show”.



O programa era bastante original na época e era difícil não sucumbir ao encanto desta pequena e bem simpática personagem. Outros projectos similares, como “The Crazy Barn Show” premiado com o “Best European Online Production” pelo “Prix Europe”, ou “The Wild Life” finalista do “Prix Jeunesse 2010” e vencedor em 2010 de um “Silver Telly” <sup>1</sup>, são exemplos das po-

tencialidades quando a animação tradicional<sup>2</sup> e a interactividade se encontram. Assim, o objectivo da nossa investigação consiste precisamente em estudar novos métodos de animação interactiva, onde personagens virtuais possam ser capazes de desenvolver conversas em tempo real, de uma maneira credível, sem recorrer a “softwares” complexos, linhas de programação ou sofisticados instrumentos de captura de movimentos (obtidos a partir de um actor real ou de fantoches). Para isso, analisamos o caso da “Go - Reel Time Animation System” uma versão actual do “Cartoon Broadcast System (CBS)” desenvolvido pela empresa dinamarquesa “FlickerLab”, que traz à vida personagens animadas através de uma aplicação de baixo custo, gerador de animação em tempo real com a qual se pode interagir através de um “joystick”. Para isso, analisamos o programa de televisão intitulado “A Noite do Óscar”, actualmente em exibição aos Sábados à noite, na RTP2, concebido com este sistema. Neste artigo, apresentamos as informações necessárias para compreender o funcionamento do sistema, seguidamente analisamos os aspectos de concepção, nomeadamente o design da personagem, a animação, a integração dos diálogos, a expressão facial, os gestos e finalmente, a hibridiz do resultado visual.

<sup>1</sup>. A informação de ambos, “The Crazy Barn Show” e “The Wild Life” está disponível em <http://flickerlab.com/site/case-crazy-barn#/realtime-animation/>  
<sup>2</sup>. Entende-se animação tradicional no sentido do desenho “frame by frame”.

F2. Programa de Televisão “A Noite do Óscar”.



## 2 · Análise do Sistema

O “Go System” funciona a partir de um computador vulgar, mas robusto, de preferência com dois monitores. A aplicação controla todos os elementos, como imagens, animações e cenários, que são criados previamente e inseridos num ficheiro Flash. Este ficheiro é disponibilizado ao animador, que apenas tem de substituir a informação existente por uma nova. De seguida, o novo conteúdo é exportado através de um script que executa e organiza toda a informação em pastas específicas e locais de arquivo do “Go System”. A partir daqui é necessário arrancar com a aplicação. Surge um interface com três campos principais: o editor das cenas,

a configuração da cena e a configuração do actor.

O editor das cenas permite seleccionar, através de “thumbnails”, quais as cenas que o realizador ou o animador pretende utilizar. É também neste local que as imagens são seleccionadas e ordenadas, sequencialmente, na “timeline” possibilitando, em última instância, a criação de uma narrativa completa. A configuração permite organizar todos os gráficos importados para o sistema, que gera três modelos de gráficos: “backgrounds”, personagens e “overlays”. Os “backgrounds” representam os desenhos que compõem a última camada da cena e o local onde a animação irá acontecer. Cada cena contém um “background” que é colocado por detrás da personagem, preenchendo todo o quadro. As personagens são construídas a partir da sobreposição de vários “overlays”. Estes “overlays” são, muito simplesmente, as zonas recortadas da personagem: pernas, braços, cabeça, corpo e olhos, que quando colocados em camadas, uns por cima dos outros, completam a personagem por inteiro. Esta ligação entre as várias peças do corpo é feita no campo da configuração do actor. Depois da personagem estar completa, é necessário posicioná-la num local específico da cena. Em “A Noite do Óscar”, a personagem tem duas posições chaves: de pé, na zona frontal e central do palco, e sentado, atrás da secretária. A partir daqui, é possível accionar e controlar as animações dos “overlays” da personagem através de um joystick. Para cada movimento da cabeça e dos braços, é atribuído um botão do “joystick”. O realizador, quando atento ao sentido dos diálogos e da sua intensidade dramática, consegue então, controlar os gestos, acenos de cabeça, olhares e expressão da personagem. É dessa forma que a personagem se move e interage com outras. No caso do Óscar, dialoga com um convidado real. Para que esse diálogo aconteça, a voz do actor Pedro Fernandes (que interpreta a personagem do Óscar) é gravada através de um microfone, e importada para o sistema. Este áudio irá despoletar o “lip-sync” da personagem que consegue reconhecer oito fonemas diferentes. O diálogo da personagem inclui a fala, os movimentos faciais (o desenho da boca, a expressão emocional da face, a direcção do olhar e o movimento da cabeça), e os gestos das mãos e dos braços.

Os “overlays” constituem, portanto, partes de personagens e podem ser colocados em qualquer cena, no topo dos “back-

grounds” ou de outros “overlays”. Estes também podem ser dinâmicos, na forma de animações em “loops”, trazendo mais vida à cena (carros que passam de um lado para outro, ou uma luz intermitente). A conjugação das personagens, cenários e “overlays”, o reconhecimento automático do “lip-sync” e as diversas escolhas de enquadramento na “timeline”, definem todos os elementos necessários para a produção do programa.

Neste caso de estudo, o facto da personagem dialogar com um convidado real implica a captação em imagem real — em fundo “croma” de cor verde — e um posterior trabalho de pós-produção vídeo. O vídeo resultante das filmagens, não é incorporado no sistema. Assim, após a correcta utilização do “Go System” para a animação e consequente edição de imagens (que inclui a inserção do plano do convidado), o programa é exportado. De seguida, num editor de vídeo, para cada inserção do plano do convidado é colocado a imagem real em cima do “background”. Após a conclusão de todo este processo, então sim, o programa é gravado numa bobine de emissão em “betacam digital” e entregue à operadora.

**F3.** O actor Pedro Fernandes interpreta a personagem-pivot em “A Noite do Óscar”.



### 3 • Personagens

Neste género de programas, e em conformidade com o caso da “Rita Catita”, o design da personagem é de uma importância inegável. Se tivermos em conta que se trata de um “talk-show” torna-se imperativo que a personagem, e pivot, seja a mais comunicativa e apelativa possível. Se por um lado, é mais rápido para animadores utilizarem formas simples nas personagens porque no processo da animação é necessário repetir inúmeros desenhos [2], por outro, é uma maneira de preservar a expressão original do desenho, quando inúmeras imagens têm que ser criadas por diferentes animadores. Mas é sobretudo, a simplicidade da linha



de contorno, o uso de formas geométricas básicas e a escolha de uma paleta de cores mínimas, que constitui uma base de trabalho para o desenvolvimento de um desenho de personagens que sejam apelativas e comunicativas. Assim, o estilo adoptado para o desenho do Óscar não foi ao encontro de um visual realista, mas ao invés disso, desenvolveu-se um “cartoon” em 2d. McCloud [3] define “cartoon” como uma representação “icónica”, porque é precisamente uma forma de expandir a informação de um desenho conceptual através da simplificação. O que significa que o estilo “cartoon” elimina informações supérfluas, detalhes complexos ou distractivos, permitindo que o espectador foque a sua atenção no que é essencial. Para além disso, o estilo “cartoon” possui um código muito simples e universal de identificação que todos entendem e uma qualidade artística que Eisenstein [4] chama de “attractability” (que pode ser entendido como a conjugação da atracção com a afectividade).

Assim, as personagens foram concebidas através de desenhos bidimensionais (2d), tendo por base, formas de construção geométricas, focado em detalhes essenciais. No entanto, se um estilo “cartoon” de formas relativamente simples e icónicas representa uma premissa importante para uma linha visual expressiva e comunicativa, então, para uma rápida identificação e ligação emotiva com o público, o uso de personagens estereotipados revela-se uma solução engenhosa. Os estereótipos servem um propósito importante, pois permitem que o telespectador identifique rapidamente a personagem e que faça um juízo imediato. Elementos da criação, como o nariz estreito, comprido e alongado, o queixo forte, o cabelo cuidado, as sobrancelhas arredondadas, o corpo elegante de pose firme, a roupa clássica, a gravata e os sapatos coloridos, revelam pistas que projectam traços da personalidade do Óscar. Todas estas pistas visuais levam o público, inconscientemente, a fazer uso dessas referências para, quase imediatamente, ajuizar acerca do papel da personagem, criando expectativas acerca do seu comportamento e identificando o seu posicionamento social e cultural. Estas pistas podem incluir roupas, corte de cabelo, características faciais, postura, aparência, idade, sexo, raça e modo de falar ou de movimentar-se. Este processo inconsciente e mental de comparar e fazer suposições acerca de uma pessoa poupa tempo e esforço — o telespectador não tem necessi-

dade de possuir uma formação especial para identificar a personagem, isso é conseguido instantaneamente — permitindo que se estabeleça uma ligação adicional com o telespectador e, portanto, mais condições propícias para que surja empatia, credibilização e interesse pela personagem. Esta ligação leva ainda, como consequência mais alargada, a uma compreensão mais rápida da acção, dos diálogos e neste caso, de todo o contexto do programa.

#### 4 · Animação

Não depende exclusivamente do design de personagens o sucesso de audiências de um programa. Assim, a animação <sup>3</sup> tem uma larga responsabilidade neste campo. Como vimos anteriormente, não são necessariamente estilos mais realistas que tornam uma personagem mais apelativa. A principal razão porque isso acontece tem a ver com factores de credibilidade. Como um factor decisivo para a credibilidade da animação, o público tem que apreciar a sua autenticidade [5] e para isso, tem que ser capaz de, inconscientemente, desligar a sua descrença sobre a forma não humana que a personagem aparece, e ser capaz de se envolver com ela, como se de um ser autêntico se tratasse. O objectivo primordial é que o espectador possa sentir que as acções da personagem, as suas emoções e a sua interpretação são o resultado das suas próprias motivações internas.

No campo da animação, o estilo “cartoon” refere-se, geralmente, a um género de animação que envolve os 12 Princípios de Animação, desenvolvido pelos estúdios da Disney. Estes princípios foram criados através do estudo do desenho animado e da observação do movimento na vida real, e pretende identificar quais os aspectos do movimento que servem à credibilidade das personagens [6]. Estes princípios não representam novos conceitos relacionados com o movimento, mas são antes, anotações técnicas que procuram caracterizar uma personagem de uma forma mais credível. Estas anotações influenciam padrões de movimentos específicos que resultam em personagens com um desempenho mais credível e fluido. É claro que isso não significa que essa “credibilidade” só aparece se todos estes princípios forem utilizados. Aliás, já desde os anos 50 que os estúdios da “Hanna Barbera” demonstraram que uma animação sintetizada, de baixo custo, pode alcançar resultados expressivos, utilizando

3. Do original em  
Inglês: Squash and  
stretch; Anticipation;  
Staging; Straight ahead  
action and pose to  
pose; Follow through  
and overlapping action;  
Slow in and slow out;  
Arcs; Secondary action;  
Timing; Exaggeration;  
Solid drawing.

a interpretação vocal ou a animação minimal de algumas partes específicas da personagem de uma forma enfatizada. Na década de 90, com a evolução da animação por computador, a maioria dos desenhos animados baseados em animações vectoriais para televisão e internet, ou as séries de animação 2d e 3d de baixo orçamento, foram criadas apenas com apontamentos muito subtis dos princípios de animação. Para suprimir estas “falhas” eram utilizadas diferentes técnicas, como o piscar das linhas de contorno, forçando ou distorcendo algumas formas, criando súbitos movimentos de câmara em personagens “congeladas”, por exemplo. Embora nestes casos sejam perceptíveis alguma falta de movimento, a animação resultante, nomeadamente das personagens, sustenta algum grau de credibilidade. Assim, devido à limitada capacidade do “Go System” e do baixo orçamento disponível, a personagem do Óscar foi criada através de uma animação sintetizada de movimentos minimais, usando a técnica clássica do “frame by frame”, e de somente alguns dos princípios de animação. No entanto, a congruência do design da personagem, do estereótipo do típico pivot americano deste género de “talk-show”, da simbiose entre a personalidade da personagem e do seu estilo gráfico resultam numa personagem convincente, capaz de dialogar com uma personagem real e até de demonstrar rasgos de personalidade.

## 5 • Movimento Facial, Olhar, Gesto e Discurso

No meio académico a face é comumente apresentada como o principal veículo na representação da emoção [7]. Para isso, a animação facial envolve conhecer como funciona a articulação labial, como se exprimem os olhos, as sobrancelhas e as bochechas. Mais do que isso, a animação exige conhecer a relação entre estas diferentes zonas da face [8] e como todos os elementos podem ser controlados. Para entender o comportamento das expressões foram criados vários sistemas, com base em estudos anatómicos, como o “Facial Action Coding System” (FACS), que descreve qualquer movimento facial visível e a respectiva acção produzida pelos músculos dessa zona [9]. Mas tem sido através de técnicas avançadas, como os sistemas de captura de movimento (mocap) e do “rotoscope” que a reprodução do movimento do corpo humano tem evoluído. No campo da indústria cinematográfica e dos

videojogos, estas técnicas representam um importante instrumento de trabalho, na medida em que procuram alcançar elevados graus de credibilidade, muito particularmente na representação facial da personagem. No campo da animação 3D, desde “Avatar” (2009) de James Cameron, e mais recentemente em “The Rise of the Planet of the Apes” (2011), de Rupert Wyatt, que a simulação de expressões faciais e das suas respectivas representações emocionais alcançaram resultados muito satisfatórios. Em ambos os exemplos, a empresa “Weta Digital” responsável pelos efeitos visuais, conseguiu — ainda que em personagens não-humanas — criar personagens carregadas de emoção sobretudo através da interpretação facial e, em particular, através da expressão do olhar. O olhar é uma característica muito importante na expressão das emoções, exprimindo ainda comportamentos de comunicação não-verbais, regulando o fluxo de conversação e sinalizando a busca de “feedback” durante uma conversa [10]. Para além do olhar, os movimentos das mãos e braços desempenham um papel importante na capacidade comunicativa do corpo. Consideradas as partes mais fluentes e articuladas do corpo, mãos e braços são capazes de expressar inúmeros significados. As pessoas produzem gestos espontaneamente com as mãos quando falam, e tais movimentos acrescentam indicações e informações que realçam os argumentos de uma conversa. Na verdade, o significado dos gestos está intimamente ligada ao discurso, e a sua função é precisamente a de regular e estimular uma conversa [11]. Assim, gesto e fala estão intimamente ligados. É indispensável para sustentar conversas credíveis que os gestos ocorrem ao mesmo tempo que a fala, garantindo um fluxo mais natural da conversa. Por essa razão, a voz do actor Pedro Fernandes é gravada na altura das filmagens e durante a entrevista com o convidado real, deste modo, o diálogo acontece de um modo natural e fluido. Para além disso, o vídeo servirá de referência para a animação do Óscar e claro está, as filmagens da convidada servirão para uma posterior inserção nos cenários ilustrados.

## 6 • Conclusão

Do nosso estudo, podemos concluir que, de um ponto de vista conceptual, alguns dos princípios de jogo estão sendo usados pelo sistema, em particular no que diz respeito ao papel do jogador

como criador. Ainda assim, a inovação deste projecto reside no cruzamento das suas várias expressões híbridas. No final, o programa televisivo resulta numa linguagem que Manovich [12] chama de “meta-linguagem”, pois combina as linguagens do design, da ilustração, da animação tradicional, da animação computadorizada, do vídeo e da interactividade. Segundo Cubitt [13], a evolução da animação digital é, precisamente, um dos aspectos mais relevantes e revolucionários na ascensão da cultura visual digital contemporânea e tem uma tendência para fomentar a inovação. É precisamente este último ponto, que nos leva a investigar este sistema, pois estamos actualmente a desenvolver um sistema de animação interactiva que maximize a criação de animações, através da captura do movimento de um actor. O objectivo é melhorar o controle da animação do lado do utilizador, ampliando a plataforma do jogo. Neste processo planeamos desenvolver um modo de utilizar alguns princípios da animação desde a altura da aquisição do movimento do actor. O objectivo não é apenas alcançar melhores resultados na animação de personagens, mas também, obter melhores soluções na manipulação do sistema, mantendo o baixo custo do equipamento e dos recursos humanos.

Nos últimos anos, em Portugal, os operadores de televisão têm vindo a adquirir formatos de animação provenientes essencialmente de duas fontes: a primeira, adquirindo séries provenientes de feiras internacionais como a MIPCOM, e a segunda, comprando a preços muito baixos produções nacionais que resultam, na sua quase totalidade, de projectos co-financiados pelo ICA. Neste último caso, as produções nacionais têm sido desenvolvidas por três ou quatro estúdios de animação, que sempre enfrentaram grandes problemas para financiar a sua produção. Sem recursos, a adaptação às novas tecnologias é sempre muito difícil. Embora a tecnologia permita produzir mais rapidamente, exige maiores investimentos iniciais e diferentes abordagens. Essa é a razão porque soluções como esta, podem representar uma forma empreendedora e estimulante das produtoras nacionais encararem a animação, assim como abrirem-se a novos modelos de comunicação com os seus públicos que não passe apenas por uma comunicação unidireccional, mas encarando a interatividade como um ponto importante e crescente na linguagem televisiva.

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# THE INFINITE PRINT VERSUS THE TANGIBLE MEMORY OF THE ORIGINAL

The multipliable potential of the copy, as an ontologic discourse of the post-industrial era of the twenty-first century.



**Jose Antonio Castro-Muñiz.1**

## **Discretization and atlas, versus painting canvases and dictionaries. The new paradigms of multiplied art**

Contemplating the devise of the art of the print from more than two thousand years ago, it is evident that the sculptural and physical aspects of it, has largely given way, to the intangibility of the chemical photographic projections first, and electronic imagery afterwards. However, we also know, that despite the flow of obsolescence that is derived from the application of technologies to the art -the new inventions and discoveries- never, or very rarely, have made disappear the precedents.

Neither phonetic writing has not cleared out the pictograms or naturalistic representations, nor the picture has not replaced the paint; even though, some authors predicted the death of Painting, after the invention of the collotype. Henry Fox Talbot called its salted paper prints, “photogenic drawings” instead.

Nevertheless, that capacity of envision either on dreams or through the imaginative world that all of us posses, need both of trompe l’oeuil’ as the abstract languages fairly encoded. It needs of models more and more evolved. It seems that we are not pleased with the window image on a painted canvas, the print on paper, or else, but, we need many other means and systems of vision, more and more sophisticated and feasible. After more than two decades in which Postmodernism and conceptual art defied the more representational art, being replaced by the Idea’, the project and strategy, we are involved now on the present time, with Multiple Art proposals, and with new 3D ways that expand the sculptural world in a scenery that trespass the architectural barriers and take them into a land Earth landscape, such as Walter’s de

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Maria 'lightning field'. That is the reason why artists are creating a new generation of multiple as graphic art like the anthropometric pantographies by the Indian artist Justin Ponmany, that look more like an atlas or map than a portrait. We should highlight the massive installations by the Chinese artist Ai Wei Wei, with thousands of objects from Chinese tradition that are set on new arrangements like architectural and cities skylines, or the overwhelming cascade of foxes that fly in the air of the room that end up collapsing against a window pane By Cai Woquiang. All this new ways of experiment with contemporary art, carry on with a new experience of the multiplicity in awesome numerical and spatial features almost unbearable.

### The paradox of discretization and reduction into a model

More than paradoxical still, is that even with the most modern digital technologies, and even though their internal complexity and external power, we are forced to generate models that trend to discretization, meaning to say, the necessity of reduction of this analogue reality into a mathematic- statistic *modus operandi* that should be much more handy, but, that with a great precision is able to predict the behaviour of this phenomena, from which, at least, in principle we now nothing about its final ending.

Nevertheless, what it is true, is that this third dimensional and analogical idea -that the last or plate possessed- has given way to a different system and, in our opinion should be more accurately called map. Map in the sense of being taken as a system of abstract signs that represent in descriptive way something real; a frame of small data that allows us to mentally rebuilt something bigger in a more complex way, and easier to memorize.

Georges Didi Huberman<sup>1</sup> in his book 'Atlas or how to carry with the world on our back? Retakes the idea of a map of maps' that is an Atlas, developed from the intellectual character of Aby Warburg and his proposal of the Mnemosyne Atlas. He mentions the following:

'We would not read an Atlas the same way we read a novel, a history book or a Philosophical statement, from the first page to the last one. Besides, an Atlas, should begin - It won't take too long to realize- in an arbitrary or problematic way, in a way that

1. Huberman Georges  
Didi. Atlas, o como  
llevar el mundo a  
cuestas. Catalogo de  
la Exposición MNCRS.  
Madrid 2010. Pg.24-36.

is different from the start point of a story or the premises of an statement, in terms of its ending; it trends to be elongated until a new region is presented, a new knowledge zone to explore, fortunately an atlas almost never possess a shape that could be taken as definitive. In the other hand, an atlas shouldn't be said to be made by pages, on the bold sense of the word: rather it is made of prints and frames on which images are displayed; prints that we go through them with a precise intention on that we wander over restless, letting our thirst of knowledge to walk around from print to print, from image to image. Experience shows that almost all the time, we use an atlas combining this two ways and gestures, both so different apparently: we open it up seeking for a precise information, but once the information is obtained, we won't abandon the atlas definitely, but, we wander around once and twice about all the cross lines, without being able to be focused nor closing the collection of prints, before we made a walk about, idle, after some time, without intention, going through that forest of images, its Dedalus, its treasure. Until next time, equally useless or intentionally profitable.

We understand this way, just by simple evocation of this paradoxes, and unfolding usage- that behind its harmless and useful appearance- an Atlas could be unveiled, for anyone who looks at it carefully, as a double object, dangerous, or either explosive, but, inexhaustible and generous. In one word, a mine. Atlas constitutes a visual way of knowledge, a wise way of seeing.

Besides, and due to fact of setting together and imbricate or imply both paradigms, contained in the last expression -aesthetic paradigm on the visual form, and epistemic paradigm on the knowledge-, atlas subverts in fact the canon shapes from which both paradigms are made, and recalls for excellence, and even its fundamental condition of existence. We know that Plato's tradition has promoted an epistemic model based on the prominence of the Idea: true knowledge means in that context, that an understandable sphere -has previously been extracted or purified from the sensitive media- in other words, from the images where phenomena are shown. Modern versions from this tradition, rely on the following: things (Sachen, in german) have no reasons, nor explanations, or algorithms, but, by means of their causes (Ursachen) correctly formulated and deduced, for instance

mathematical language. This will be in a briefly summarized way, the standard of any rational knowledge of science. I results very relevant, that the mistrust by Plato about artists- dangerous image makers, and appearance manipulators- won't avoid that humanistic aesthetics assume as its own all the prestigious of the Idea. As Erwin Panofsky has shown. And that way Leon Batista Alberti, was able to deduce in his work "De pictura" the notion of the canvas painting as an unit and formulate from a rhetoric period: a 'correct sentence' where each low rank element: surfaces create the limbs, that embody the propositions, that generate the "clauses" or "groups of propositions". Within the modern versions of this tradition, that we may find, for instance on modernism by Clement Greemberg or recently by Michael Fried, paintings find their superior reason, precisely on the enclosure of their own spatial, temporal or semiotic frames, from which the ideal reason between Sache and Ursache preserves intact its power of law.

A visual way of knowledge or doctoral way of seeing, the atlas mutates all these frames of understanding. It introduces a fundamental impurity, -but, a blossoming a remarkable fecundity- that both models were meant to avoid, and that was the reason for they were conceived. Against any epistemic impurity, atlas introduces in the knowledge the sensitive dimension, diversity, and a lake character of each image. Against any epistemic purity, it introduces the multiple, the divers, the hybrid of any set up

Therefore, to start with, the atlas blow up all the frames. Brakes the certitude auto reclaimed of the science, sure about all its truths, and art sure about its criteria as well. Invent, among all that, the exploration of in between zones, heuristic intervals. Ignore deliberately final axioms.

And thus, it responds to a knowledge theory exposed to the danger of the sensitive and an aesthetics exposed to the danger of disparity...

Its motor principle is by any means, but imagination: Dangerous word you may find... The imagination accepts the multiple (even enjoy that). It doesn't intend to summarize the world or seeks for scheme reduced to a formula: in that way the atlas is different from a summary or doctrine catalogue. It is not meant for making an exhaustible and endless report: in that way an atlas is different from a catalogue or an integral archival...The inexhausti-

ble: It exist so many things, so many words, so many images in the world!. A dictionary will dream of being able to be its organized catalogue, ordered by a definite and immutable principle (alphabetic in this case). The Atlas, nevertheless, is guided by transitory and movable principles. The kind of principles that will be able to suggest, in an endless way- new relationships even more numerous still- in alphabetic terms."

In that way, Didi Huberman, describes deep in thought, part of the polysemic and peripatetic meaning of the actual contemporary graphic art works -that personalities like Marcel Duchamp foreseen with his work "Boîte en valise". "Atlas or how to carry the world in a back pack" looks like tailored for the multiple art work nowadays, like the resemblance of folding maps that from ages on, had treasured the complexity and mnemotechnical information in order to be transported easily, but, that in the other hand contained millions of data impossible to be kept in a very reduced space of some sheets of folding paper. This functionality and versatility of the multiplication will have its strongest defenders after the invention of paper.

The print and the spread out of information and knowledge had not been possible without the media on paper, at that time. As well as that, the necessities of communication and diffusion nowadays have needed of the computer media to do so. Paper, print and illustrated book that we call Atlas are composed today with digital ten plates, computer interfaces, and processing data units as a mind tool to create the knowledge, and to generate images and communication.

That way in this third millennia of us, "the alphanumeric plates that we call bitmaps" may be carried on a pocket, send from one place to another, and being shared in an interactive way, through net systems; or simply being printed out as needed, and almost at the moment, with devices highly used as commodities.

It is just at that moment that the tangibility of the representation manifested. In other words, that along the process in all, we need devices and machines to unveil the mystery enclosed in numbers, or if you want, in the tiny voltages of the circuitry of these machines.

This untouchable last or plate, not only has demonstrated the abstraction level that contemporary Art has attained, in terms

of processes, but, the operation modus, has diverted to a mathematical model in which its equations depend upon, and again, on machines that could decode its meaning. This is a change of paradigm in Art that has no previous ancestor.

We could say that, the precision on the construction of the image process depends upon mathematical algorithms that are common for a wide range of disciplines, artistic, scientific or else. A mathematic ontology from which they depart a great number of branches and applications even far from artistic facts, but based on the visual representation of this data or graphic representation of the same. Another step on the minimalism in storage and speed processing from an Atlas of endless applications. Newly speaking of abstract codes that generate images and communication, in most cases, lacking one reading, but, multiple instead, polysemic. What makes the process to have an appearance so real?

Perhaps, since the numerical language with which we work is very precise, the representations generated are, with high accuracy equal between themselves. But as we deal with binary mathematical codes, we can make a zero to become a one, for example, in order to get the appearance of a blue sky instead of a cobalt blue.

Although it is more complicated than that, and requires more operations, what we are trying to express here, is that: by changing and adjusting its parameters, we may arrange that deviations (known technically as discrepancies) will be redrawn and resulting from its most visually similar to an idealized original, but, maintaining only formal similarities with it.

All of us know, that the pure digital is a myth, an abstraction, in terms of which we reinterpret reality; even the input is a digital abstraction, because the information that can be encoded differs from the concrete reality of infinite nuances.

Any craftsman of the digital world learns, that digital encoding process –the so called analogue to digital conversion process, which occurs on any scanner, digital camera or digital recording device, inevitably left in the way all sorts of variations, small or tiny subtleties and nuances of the original phenomenon, or source.

Similarly, digital cameras and scanners make analogue abstraction of any subtle structure of the original image, which is

too small to be captured at the sampling temporal or spatial rate or any intensity variation that is lower by one bit to the grading system dynamic field.

That's why the Artifice that artists have use for centuries to create art works and representations, conceptually has changed less than other elements, which are definitely novel, seductive and transcendent: as the fact, that their way to conceive art was something unique and unrepeatable, this has become today no longer relevant, and leaving finally closed this issue that has been debated throughout the twentieth century. But it also opens up new issues that new media provide: as the subject of authorship, representation of time, space, non dimensionality, obsolescence, and control of the multiplicity, the value of Art document, communication, interdisciplinary, and so on. All that belongs to the concepts of collective memory and individual memory and preservation as well.

### **Languages, idiolects, metalanguages and polysemy in the graphic worlds of the third millennium**

Making a bold summary, in a few words. Languages of Art have passed in a broad sense of the unique and analogue, to digital and multiplied.

As in the present languages some words are onomatopoeic, and sound in ways that attempt to reproduce, and analogically represent or allude to the fact: like crack, splash, etc.. It has been human beings who have understood art as analogue representation. Others, however, are more interested in expressing what is not there or can not be seen directly, according to a more appropriate way to express something as difficult as: the coherence and timing with what happens in its time, with aspirations of the current and cultural events that occur, and the influences and main trends of thoughts among each other: as are the philosophical, scientific conception of the universe, social dynamics and activism, the other arts and a huge conglomerate of activity and thought, that we have agreed on calling, contemporary. We will not discuss about, how abstract and unclear is the main trend thinking in actual Art field, in which everything seems to fit. Syncretism and multidiscipline of our current culture makes that sometimes graphic images represent what it happened in a similar

way, i.e. seeking for analogies with what we see, with details of colour, shapes easily associated, spatial representations and that match our optic vision, without further apparent reflection, except for the fact of the copy or imitation of what we observed. It is argued that in short, what we are creating is a document of what it happens, and apparently without any thought or any subjective attitude. We can note however, that the-so called- documentary photography possesses its own vision, and it is so characteristic that the vision carried out by different authors sometimes changes their approach radically.

On the other hand the graphic image that is generated by a computer causes a breach on the documental objective on the benefit of the plasticity and moulding aspects that serve to create new others, whimsically designed by their author. This means that sometimes the subjectivity brings together concepts closer to the particular way this reality is perceived by the artist: "There is no reality, only interpretations." In other words, we allude to the fact that the apprehension of reality cannot be condensed into the formal aspect of one painting or a photograph, rather, we believe that a subjective multiple image created by a collective of artists big enough to provide with their points of view a framework of unlimited polyhedral faces will be much more interesting and sensible. Hence, the many meanings attributed to the graphic arts is multiplied actually to many much faces. That is the reason why, we consider multiplied graphic art polisemiatic.

Documentary photography has its icons, and these coin down concepts and preconceptions that artists like Andy Warhol or Sigmar Polke have retaken in their creations based on previous existing photos, with the intention of representing the American culture of the 50s of XX century.

In most cultures, that have been around from millennia, the action of catching and handling images from the past, have served as a provision of contexts and concepts of graphic images, to be converted into icons. The Icon of batman, the man with bat wings, for instance, comes from the engravings by Gustavo Doré, that he represented as bat wing demons in the Stigia sea eating the souls of the sinners.

The hieroglyphic action, on the other hand, was extended to different fields related to the fact of making representations in a

conceptualized way. All cultures have their anagrams and logos, to put it more currently update.

So all the researchers seem to agree that discursive thought which led to the written language, has coexisted with representational codes both analogue and abstract graphics.

Roland Barthes in his book "Eiffel Tower"<sup>2</sup> comments: The relationship linking the meaning to the signifier, is an unmotivated relationship, for example, when we say 'an ox', the sound itself has no analogue relationship to what we call the psychical image of the ox. This is as true as the sound changes from one language to another. The second articulation, of the phonemes, work by oppositions, whose number is finite and are binary oppositions. Therefore, we say that our articulate speech is a digital code, because it works for digits, such as in electronic machines. This double articulation is the foundation of articulate speech.

Along with this dual articulation, which is our language, there are other communication systems in which case, the relationship between meaning and the signifier is analogical. This is the case for example with photography (where the relationship is very feasible, one might say), with schemes such as the Highway Code, and certain patterns of educational use. Therefore we cannot talk about language in the case of a system of signs without double articulation and where the relation signifier / signified is analogue. What we need to understand is that precisely because of the different nature of the sign in each of the two systems (analogue or arbitrary), each system, each code refers to mental functioning, to an awareness and a reduction of reality that are different.

We could say that these two codes have a phenomenology and a wholly different mode of consumption.

Curiously, this time in writing as a representation of articulate speech, is that the earliest known writings are pictograms and therefore analogue ....

The writing actually appears as a visual system of articulate speech. Without going into detail of the history of writing, it may be interesting to consider the system of Egyptian hieroglyphics. "Perhaps after reading this, someone could also rightly say, that painting, drawing and art in general, joined and influenced the linguistic creation, so much so, that even, when a mathematician, a physicist, an astronomer, an engineer, or architect tries to de-

<sup>2</sup> Barthes Roland.  
La Tour Eiffel.  
Paris 1978. Pg. 65.



scribe his theory to explain a phenomenon or show their graphs, they make a plane, a drawing or a visual representation, because they need a system to add data that depicts a scene to the concepts described therein, which recreates an optical understandable point of view.

Continuing his line of thought R. Barthes asks: “Do not you think that the desire to grant the status of language to visual procedures, or to the means of iconic expression, reflects a desire to provide with value to these systems, which are judged to be a little suspicious based on the reason of its power of immediate effect on consumers?”

Absolutely. The picture as a sign, as part of a communication system, has considerably a great deal of impression. We have tried to study this power to shocking. (Cohen-Seat has done with the movies) but still little is known of the semantic profitability of the image. All we can say right now is that we must be very cautious: as a sign image carries a weakness, say a very big difficulty that lies in its multiple meanings. “

However, concludes R. Barthes: “Mathematics is an example of a reflection that has progressed considerably, by using a system of signs and display original proceedings.”

But what happens in our age when we find that mathematicians, engineers and physicists that have developed machines of communication, storage, complex computing systems, etc?... At first they were the only ones, able to handle these machines, but with the passing of time, and in order to finance their research and disseminating its social use of the technology, parallel to the binary coded language that allowed them to communicate with electronic machines, they had to design another iconic system to allow users being able to use these machines without knowing a word of programming. To put it in another way, they designed a visual way, faster and more intuitive than the data access system and management of applications by purely mathematical means that existed in the beginning. In fact hardly anyone need to know programming or machine language codes to work with applications and existing computer programs these days. They all have a graphical interface, which connects the user with the machine. And here at this point are linked back to discursive and representational codes and I say again, because like in the past when trying

to express something that could not be understood or compiled in simple words referring to complex mechanisms, went to the pictogram, it is now necessary to implement in turn an Iconographic language that allows us to simply remember what we are running on a computer algorithmically.

So in that other life of the systems that allow us to express ourselves and communicate, as it happened in the era of ancient Egypt with the cuneiform and the hieratic writing, the former, met up with other graphic morphologies as the hieroglyph and iconic, that instead of phonemes represent associations of ideas and generally whole phrases or sentences. Sometimes a sign has such a symbolic meaning, that entire chapters of books are needed to understand it.

The Eastern world gives us clear examples in his writing, which in its schematic strokes has not abandoned its graphic drawing. In fact, as George Elliott says, they don't distinguish so clearly between the two concepts. But they go even further with his poetic and visual arts, because in his mind the images without the text are incomplete.

The Art of Western poetic, for example, has often transformed the impression on something descriptive, while in the East, the Haiku could be defined as contra descriptive, since there is almost no rhetoric but a deepening of the right elements that express in a minimal form the content.

The description, on the other hand, is based on Western culture in methodical ways of contemplation associated with the Christian-medieval asceticism. The influence of the Gospel story, which has transcended the myth and theogonies, so often repeated in our European societies, corresponds to the relations of the subject, taken into a metaphysical form, with the material space around him and his ultimate fate in the divine far beyond.

The recipe for narrativity in the western world, and therefore illustrated books are a good example, possess schematic resemblances of the Bible narration.

Zen and Buddhism are articulated on the basis of metaphysics without subject and without God, ie the self-improvement that makes the individual himself.

Says a teacher of the Tao: The perfect man is like a mirror. Do not take anything, but, does not reject anything. Receive but do

not retain.

In comparison, we should mention in the Western tradition to Saint Thomas, when he describes the supreme divine manifestation as a single beam of light passing through the glass without breaking or staining it. The windowpane in western world, thus, is full of light and the mirror full of images.

In Hua-Yen doctrine, however, speaks of Haiku as a collective body, a diamond network, where each diamond reflects all the others and so on, ad infinitum, do not need a centre, nor an only light irradiation, but a game of bounces, which has no unmoved motor of the first species, but a spherical dictionary, in which one word can only be defined by other words to complete their multiple meanings. For European Renaissance, the mirror's reflection has to do with the nature of man that is seen in, the narcissist, it is the image and likeness of his ego; man is the centre of all things. To the Eastern mind, the mirror is meaningless, it is empty of any symbols, for it is able to reflect everything that is set in front, so it is a mirror of mirrors reflecting the infinite void.

Thus the Haiku is the memory of the unexpected, the recognition of repetition without origin, which occurs without cause or person, it is the word itself and without being tied to anything. Recently theorists of Western Art, as Gilles Deleuze, talk about the aesthetics of the disseminations. The multiplicity of visions without a single vanishing point. That there is no reality, but a fragmentation that leads us to a level of understanding that depends upon other factors, spatial-timing, psychic, cultural, and emotional intelligence. The multiple meanings of a work of art rely in our view on the schematic idea of map, versus the idea of a dictionary. That is, infinite partial views of an entity as subtle and evanescent as the "sense" that escapes from us with every definition. To put it another way, an infinite number of representations and paths of the cognitive element that is the understanding, as a quasi-eternal construction. Only we understand what we know, but the idea of knowledge has been extended to millions of digits. ! Welcome to the era of complexity!

### **The original múltiple without matter, without commitment to the truth. The use of the repeatable. Image. The medium is the message**

The original multiple, is therefore the best means for worldwide dissemination. Since the number of lasts or ten plates which it comes from, have few common characteristics with their origin, their destination or their environment. It can be modelled almost at will, taking a final chameleon shape. The most curious aspect is that anything can be multiplied in a digitized image form, admitting partial variations in appearance. Suffice enough is today, that by means of a few items, an image can be transformed into a myriad of clones. An artist aware of this fact, provokes contextualizing, the reflection, about the social and cultural aspects, human or thinking that these images convey. The great contradiction of our highly sophisticated time, is that large audiences remain on the main trend, with the contemplative tradition in which the passive spectators, wait for being fed with everything well done; and if possible very well done.

The Art of the print, reclaims this approach, sometimes critical and cynical as with Warhol, Haring, Lichtenstein or with digressions into Polke, Koons Jeff Wall or, no doubt artists like Cindy Sherman and Barbara Krugger or Felix G. Torres, have explored each in its particular aspects related to this world-picture message and our wealth of cultural entities inherited or encouraged by the media. The messages of "I buy therefore I am" is a tiny argument in a huge and complex world whose visual impact is crucial, measured in number of copies printed and available to view. What it seems clear, is that the immateriality inherent to algorithmic media, seems to be the logical evolution of the world of Engraving and traditional Printing, and fills us with new contradictions and challenges, but also of hope and potential, ever since coveted from the beginning of the human activity, aimed at getting an original repeatable, multipliable, and interchangeable.

To that ease of access, which made it possible for human beings (no matter how far apart were from the origin of the author or his work, everybody may have at their fingertips, images, text or combination of both) today it has added sounds, moving images and the ability to exchange and interact with all this, even beyond the knowledge or the will of its author, and even in real time.

Anywise, a graphical interface even on a monitor, in a physical billboard or a volatile projection, has inherited characteristics of the visual and conceptual activity developed from millennia in the deepening of the conservation and transmission of our individual and collective memory.

All this makes us to reflect on the use of the “Work of Art” by the viewer or group of spectators, extended to the millions of network users -and how this sharing of cultural events held in common among countries far separated, not only geographically, but also historically and socially- has created, and influence an uniformity never experienced before. This enormous capacity of influence even though desired by all other empires that have existed throughout the history of humanity, and even despite of the richness of different visions contributed to the same fact (the creation of Art) again causes many problems and contradictions in turn.

This uniformity begins with the standard of the language means we use. Even though we do not speak the same language, our computers do that, and we will see soon, in fact it is like that right now, the immateriality of the process causes the images to travel faster and farther than we ourselves are able to do, so our expressions created and restructured will be returned in the form of cultural products. Fashion, design, art, trend hunters are everywhere.

In short, what we wanted to baptize as “intangible matrix” centred in the engraving with light, we believe corresponds to the change of the paradigm of the incision and undercutting, for other related to the decomposition of natural light and its analysis. To put it another way, the idea of physical perpetuation that allowed us to convert a smooth surface in a landscape that we are able interpret and distinguish and would last forever -and that our future generations would read as an icon giving it the value of myth- has been diverted to new systems that do not need the physicality of the tool incision to perpetuate and access to large audiences. The endless multiplicity on the net is in charge. The resilience of our memory is being defeated on the benefit of the new replicant concept.

As happened in the past we are applying scientific theorizing in the field of Arts. Besides the subtractive colour process that is

conventionally called in current slang CMYK printers, there is another that we use in generating an alphanumeric matrix visualized on our television screens and monitors, the VGA or RGB. The Raster Image Plotting (RIP) or any colour management create profiles that represent enhance colour improvements to update and represent more faithfully what we see in order to print.

The ability of digital technology is based on the greater capacity and speed of modern readers to capture images faithfully, or rather to generate a convincing simulation. The fact that we can exchange one to another, without being noticed make a painting become a photograph, and a drawing on a writing.

This enormous change involves many contradictions, as the traditional boundaries between recording, writing, printing, photographing, painting and drawing, etc.. Are diluted to make them virtually impossible to distinguish one to another, and set the question of genders, meaningless to be taken into account. Therefore, this change, we say -together with expanding the much-hyped issue of major and minor arts- cannot solve the ambiguity between what is always meant on writing or the appearance of the visual arts.

It neither solves the problem, but just gives us more options and greater complexity. It would be hoped therefore, that for those interested in the art of The Print, we could be focus only the Work of Art aspects, instead, and leave out of other considerations, techniques, discipline or discrimination which are certainly not relevant in comparison with other like: contextualization, semantics and graphic semiotics, the influence of objectification, the narrative-poetic languages, the multiplication of the original, the meaning of the multiplicity works in the third millennium and so on.

This algorithmic matrix, together with its capacity of being reproducible, on both electronic or light devices, is readable in many languages, that a machine interprets and transforms almost on anything we want, but, above all -it reduces to ashes every vagary on the categories of the past, in order to speak only about Art Today- or rather, it starts a dialog about what can we do with what we call electronic last or ten plate, we assume, a intangible map?

The only thing we can say about it for sure, is that it has become the universal mode of representation of general usage, and

it comes together with what we intuitively design as a sharp visual experience, derived from human existence from which we draw emotions, perceptions and knowledge and keep in our brain as separate entities from non virtual way of life.

Fiction, dream, humour and drama, reality or fantasy, documentary, magic and philosophy, experimental and experiential, are aspects of the graphic work we would like to hear more often in events the Print, instead of the advances in techniques and only techniques. That even though they are very sophisticated and interesting in many ways, in our opinion they are empty in themselves, without the content and intentions of those who understand The Graphic as a manifestation of thought and advances in knowledge strategies adopted by the arts for decades.

### **The essence of the dual nature of graphic art as a principle of contradiction**

We accept the assertion that proposes that the essence of Graphic Arts is neither multiplication nor originality. The essence is hidden in the dual nature of the work of graphic art. In opposition and balance of counterparts. Graphic Art is something that shows two opposite poles of existence: the negative and positive. Neither is essential that the negative is a sheet of metal, stone or wood and printed on paper, nor both the negative is a computer program and the positive a three-dimensional light illusion. For The Graphic is conceptual from the very beginning, since its essence is based on two phases of thought, while the multiplication potential is merely a duplication process of the print.

This is most dramatically evident when changes in contemporary art can be seen in post-modern thought, or the “turn of postmodernism” which is defined by pluralism and decentralization.

A large number of ideas flourished under post-modernism. There have been elements of expressionism, several criteria have focused on subjectivity and personal gratification, and artists have explored identity, gender, ethnic heritage or autobiography. The social and political issues have become the reason or object of numerous works of art. The interest of artists to communicate with different segments of the public led them to start putting their works out of galleries and museums, which were the sites that

previously were reserved for the Arts. The Neo-Conceptualism was born in the spirit of a variety of reinterpretations, photography has become the focus. The mass media and advertising have fragmented its most intrinsic object, which in turn has become the art media. The words are not used anymore as its meaning, but rather as a means and reason for composition. The objects are made as long as only achieve their objectives in collaboration with the viewer.

The energy of many works from the late twentieth century is not based on the exploration of the way, but on the social elements of irony, and often also in a perverse sardonic testimony.

Around the mid-nineties, a new generation of artists appeared. Instead of the word “style” taken into the formal characteristics of the artwork, they began using the word “strategy” for the treatment of their subjects, thus denotes the complexity of his work in both reflection and planning. It is also typical of this generation the total absence of “the unique” personal creation style. We talk about personal approaches, poetic and its cast of creative ways. Of course, all this as a result of an age that trends to pluralism and decentralization, which assumes no hierarchy, but rather the co-existence. The important thing in art is no longer what this look like? But rather, what does this mean? This question comes together with an inherent social connotation. Today a work of art is not longer interpreted according to their visual features only, its value increases, due to their content, their quality of emotions, the criteria of rationality and even concepts of congruence and synchronicity of the visions that contributes to the understanding of cultural and historical moment in which it lives. In general, the need for empathy and connection –a touch of soul-for the third millennium society already overcrowded of artefacts and visual stimuli.

### **Networks, multiplicity, accessibility, survival. The social meaning of graphic art**

The Art of the new millennium is deeply rooted in the social context. We should say, that the social function of art, accessibility, its role and its relationship with the public is somehow innate in Graphic Art. This innate character lies in its connection with the stamp and its potential repetition. It is thanks to the fact of repeat-

ability that Graphic Art can reach different social groups. Similarly, we no longer care whether or not art represents reality, but, -and here, the art of the Print picks up Einstein's phrase: As long as the proposals in art, simply try to represent reality, they are not art, as long as they are art, these proposals do not necessarily represent reality. Art falls under speculation and philosophical strategy, ie, their interest does not focus on external reality, but in the inner exploration of human thinking and being integrated or embedded in external reality. It is then that the efforts of many contemporary artists to be objective, to present just the facts, influencing them as little as possible with their subjectivity, acquires its meaning and its meaninglessness. Art analyzes and assumed many of the ideas of Hume's thinking updated in turn by Walter Benjamin, Marshall McLuhan, Derrida, Paul Virilio, etc.. to achieve as quickly understand what is happening in this accelerated mode of living today.

The art for centuries has found in Philosophy and Thought, a free land to ground and develop their proposals, as its expanded the field was much broader than the application of mathematics to geometry and geometry to reality as in physics, and that some authors like Vasarely tried to apply to the art of creation: The Renaissance meant many things, one was adopting an increasingly and unstoppable awareness of the application of science, discoveries and technology, to the world of art, and they created for the first time an optical art at the beginning of humanism.

On the 19th Century, Photography took the place of optic representation and from then on, it was the most accurate way of documenting with images the Reality. On our time it is impossible to believe on a photograph as element of trust. We have created a new media that have changed forever the case with previous concepts of photography. Ritchin expressed in an article published in his book *In "Our Own Image"* as follows: "A century and a half after the photo made its appearance, a revolution is occurring in the production of images. This revolution begins to break down the hitherto commonly accepted certainties of the picture, turning every point malleable. The possibilities of computer-data juggler, star of the current information age, are directed towards photography. More and more computers are used to manipulate and alter photographic elements with speed and perfection. You can

add people or objects, change colours and zoom. The possibilities offered by computers retouch are more effective and subtle, are more reliable and undetectable than we ever have achieved. " What drives us to manipulate the reliability of documentary photography? What makes us to twist the most perfect visual trickery that is known so far, to break the mirror nature to pieces and then reconstruct it at will?

If subjectivity that has been a factor-of-the art, appears to be almost impossible to escape in human mental activities - then why not to try that subjectivity resembles whatever we want? There are many other factors in our modern life, that influences Art and help to manipulate reality, as Umberto Eco notes, Art permeate from the social trends of thought, we refer to the influence of ideologies.

Some artists try to make their Art works not ideological by means of certain rules and complicated reasoning, but, the psychological criteria governing the mind of man, obey to what Piaget developed with great precision, Psychogenetic studies and their influence on the development of science and the arts. His illustrious explanations on human behaviour, speak of these stages that are as furnishing mental help and contribute strongly in survival, and are yet to appreciate.

What it seems increasingly clear is that the era of globalization has brought, what has been called, a single thought, a single market, and a single idea in the world. Based on this notion of a controlled global village, artistic movements that have emerged have reacted against, and others have assumed the role of the market and the Internet, using the machinery to their benefit, and to show that art adapts and survives anyway. That rate of survival that exists in all living beings, in human societies nowadays is ruled by complicate social, and communicative ways, and in broad strokes, will be promoted and organized by ideology. Religion continually united in our history to politics, is now more than ever a breeding ground for fanaticism and fundamentalism, which exclude some ethnic groups in favour of others. My god is better than yours, my country is superior. We belong to a society that is controlled by the markets and ruled by Ideology and fear. Even the evolution of species by Darwin is challenged: but not alluding to scientific criteria, but to a religious faith, lack of any empirical

or logical reasoning, which is the peak of ideological manipulation. But far from entering into this discussion, almost eternal along human existence, and staying with what has made us as what we are, -for better or for worse-, we think that the evolutionary stages in any field have arisen because intuition and reasoning are together on human intelligence. And even though, it seems that common sense is the least common of all senses in some human individuals this days, it has guided us since immemorial time to find solutions that allowed us to survive. Most artist claim to use common sense and intuitive intelligence in their work, no matter they follow one ideology or another, we manipulate both, as a way of pure speculation of thought.

The notions that underlie our arguments and have been called Core Ideology-the name is unimportant-, are so critical in the conception of the world through them, that no matter how much we know about the natural phenomena, we where trying to elucidating only those notions in our evolving system of knowledge that generates its activity, let's say scientific, and just by means of it, we can be aware of our level of knowledge, that we call objectivity. Jean Piaget, in his book *Psychogenesis and the History of Science*<sup>3</sup>. Writes:

“Corresponding to these forms of generalization, in a simple observation level of empirical content, we find extensional generalizations, which are generalizations from” something “to” all “or particular laws to general-without any reorganization of the former.

In contrast, reflective abstraction allows the formation of complete and constructive generalizations, which constitutes a new synthesis in which the particular laws acquire new interpretations ... The reflective abstraction that derives its content from the action of the subject, and it is not in any way as a metaphor, but the expression of these construction activities from the beginning of its existence as an independent human being, that constantly make decisions taking roads and crossroads. They are not genetically preformed decisions or simply recorded as observables inherently psychological, but as training at all levels, including the most basic.

So for complete generalizations, we have to go all the way back from the start point, which is enriched by the addition of new

3. Piaget Jean.  
*Psychogenesis and the  
History of Science.*  
Abrahams Books. New  
York. 1990. Pg. 136.

knowledge. Many examples of this can be found in both biology and physics, even more commonly even in mathematics: I.e. the theory of electrons and valence, the Mendeleev periodic table of elements, which was initially conceived as a single compilation of multiple measures has become a unique tool for new discoveries. “

From all this we can infer, that knowledge is not exclusively analytic or aprioristic, as claimed by the most demagogues, but, there are also processes that present a wide range of facts, that can be drawn further, producing an input to the particular experimental subject, that makes it change their behaviour and his understanding of their relationships with the environment.

That's why many writers and Art critics as Danto, Greemberg or Baker also argue that in modern art from the 60, “the gallery has become a laboratory of experiences or a conference room.”

If we call that, analytic knowledge or synthetic, seems like an irrelevant semantic issue. In any case, the ideological issues that influence the contributions of knowledge and visions -of what we do with broad generality of society about things and events- should be more aware of the fact that its appreciation, changes constantly as the perception of what we consider art today do. At all times, it would be desirable to keep in mind that this ideal is simply a construction, intermediate steps or functional reorganizations that we serve and we leave to go to other stages. Hence, this genetic term is referred to knowledge of Art in Piagetian studies.

Thus in art, the abandonment of the final objects and unique, to ephemera and multiple, which seems to be developing lately, it's likely many human behaviour of the types listed above, describing artistic proposals presented in a way that combine efficiency statements and proposals to the adequacy / provision of the means available today. These events are organized through formalized or spontaneous entities in a sequence of actions whose conclusions and final receptors are in the audiences, that all of us have become. Yet, we speak of contemporary art as global collectivization including for the first time in our history the entire planet in synchrony. Nothing is final, just as Haacke said: “The images on the retina or the viewer's memory.” The volatility and complexity of the Art multiple are served.





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