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PREFACE

“These three fields require a high degree of collaboration with artists, producers, story editors, directors, programmers, and any number of other people in both the executive and creative ends of the business. This is most emphatically true for animation and games. Depending on the project, you will receive notes and feedback from any variety of people. In animation, from story editor, producers, more producers, the producer’s pet sitter, maybe a toy executive—whoever is allowed to have a say. In comics, primarily the editor, but your artist must feel that he or she is an integral part of a team, not a hired hand. In games, you might get feedback from anyone on the design team—publisher, producer, designers, programmers, animators, and so on.”

Christy Marx, in the preface of her book Writing for Animation, Comics and Games, pg. xix.

We open our book of proceedings with the words of Christy Marx, mainly because CONFIA 2013 - International Conference on Illustration and Animation aims to be synonymous with plurality, multiplicity and interdisciplinarity. Our teamwork and above all our passion are ever present in CONFIA’s areas of focus: illustration and animation.

We started with the need to build critical mass around the subjects we research and teach in our educational institution - graphic design, illustration and animation in graduate and postgraduate programs - and today, we are proud to present another edition of CONFIA.

It is very important that this opportunity serve as a moment for reflection and questioning, as it is not possible to understand illustration and animation in a contemporary world without thinking of the strong growth experienced by both fields in recent years. Their ability to adapt everyday to new visual languages, mainly due to the constant pressure exerted by constant technological developments, is also a key factor. Both illustration and animation have been showing strong signs of being autonomous, inside the broader areas of art and technology. We therefore
believe that these two collaborative subjects have shown that there is a wide space for discussion and a vast field for research practice. Indeed, this international conference represents a meeting point for researchers from around the world, with speakers from all continents joining us this year. As we write these words, we are already certain that the second edition of CONFIA will be successful for two reasons: first, the high quality of the papers we received, and second, the multiplicity of activities carried out by the authors in the present edition.

The conference features a wide range of specialists, lecturers, researchers and illustration and animation artists, who are often active in both theory and practice, which makes the debate and the quality of proposals richer. We go from theory to practice and then return to theory. This translates into the 45 selected papers in this publication, covering a variety of broad subjects such as drawing/illustration, animation and art theory. The content discusses specific areas of knowledge including traditional drawing, contemporary drawing, graphic illustration, information graphics, editorial illustration, illustration for children, character design, comics & graphic novels, scientific illustration, 2D and 3D animation, animation for video games, character animation, animation for virtual and 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 and illustration.

In such a diverse context, we are pleased to have as guest keynote speakers Professor Paul Wells of Loughborough University, director of the Animation Academy, and Professor Martin Salisbury of Anglia Ruskin University, with extensive research experience in animation and illustration, respectively - which strengthens the link between research and practice in the resulting academic debate.

So with the mission of discussing these issues, challenges, opportunities and trends related to everything from tradition to the constant new developments and applications, the overall objectives for the conference were achieved and now lie in the readers’ hands: to present new ideas, new technological developments that fulfill the requirements of the market and practical, state-of-the-art solutions; to provide guidance for further research and development; and to strengthen the bridge between research and practice.

Welcome to CONFIA 2013

Paula Tavares and Pedro Mota Teixeira
Polytechnic Institute of Cávado and Ave, Portugal
**Illustration Research and Illustration research: The maker in the academy**

Illustration is often described as a 'hybrid' subject, activity or craft. Universities are often unsure what to do with it, where to put it, and even what to call it. In recent years, terms such as 'Visual Communication' and 'Communication Design' have emerged and then drifted away again.

The speed with which autonomous art schools were absorbed into universities in the last twenty years left many questions unanswered. Most significantly, the thorny issue of 'research' and what that means in the creative, expressive and applied arts has caused much head scratching. With funding and esteem increasingly based on the research profile of departments, all manner of improbable research gymnastics have been undertaken in the field of Art & Design generally. Illustration and illustrators have not tended to be at the forefront of this unseemly activity, the subject being seen so often by universities as a quiet, cosy backwater. Yet authorial illustration is now a significant sector of the creative industries. Illustration students rightly expect to be taught by leading professional practitioners whilst universities increasingly expect their permanent teaching staff to have PhDs. Are these two expectations reconcilable?

**Martin Salisbury**  
keynote speaker  
Anglia Ruskin University, UK

**Chairy Tales: Object and Materiality in Animation**

In 1957, Norman McLaren made a playful short entitled A Chairy Tale, essentially playing out a relationship between a man and a chair; some years later, PES made a film called Roof Sex, shall we say, showing two chairs having a 'relationship' with each other! Both encounters then, between the animator and the object. Animation, though more often lauded and understood for its drawn and computer generated idioms, is nevertheless full of such objects and materials – pieces of clay, lego bricks, puppets, matches, toys, Christmas decorations, screws, etc – all demanding a specific approach and use.

This discussion addresses three issues concerning this aspect of the shifting technologies of animation. First, looking at the meanings and affect of objects and materials in animated films, second, the visual dramaturgy made possible by objects and materials for animation screenwriters, and third, looking at the status of animation process materials as archival objects.

Using the work of, among others, Tom Dixon, Sherry Turkle, Norman Klein and Adrian Forty, this analysis will look at a number of animated films in a spirit of their design form, material association, and narrative function in defining the scripted artefact. This will also operate in a spirit of thinking about theories or practice and practices of theory in animation.

The presentation will also include some extracts from my latest documentary film, Mackinnon & Saunders: A Model Studio, looking at the puppets made for the films of Tim Burton.

**Paul Wells**  
keynote speaker  
Loughborough University, UK
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Abstract
So far, studies that focus on children’s responses to visual texts have not looked at children’s responses to temporality in particular. Temporality is “the relation between story time and discourse time” [2]. It is a “primary organizational principle of a narrative” [8] and a crucial element in deciding whether a story-telling is linear or not. To fill the gap, this case study examined how children responded to temporal relations in J. Burningham’s Granpa [7] by conducting semi-structured interviews with four eight-year-old children from different cultural backgrounds. The research questions are: Can children understand the deviations of time in Granpa? If they can, to what extent do they understand them? What skills do they bring to the meaning-making of the temporal changes? If they cannot, how do they interpret the spreads to make sense of the whole story? Interestingly, the findings show that the children not only understood temporality in Granpa, but also had sophisticated ideas of time in general, which seem to challenge the general stereotype [2] that children lack a mature sense of time. This study opens some interesting questions worth considering for future researchers.

Keywords
temporality; time and seasons; picturebooks; Granpa; children’s responses
1 · Introduction

J. Piaget [1] notes, young children have problems understanding logical time - duration, simultaneity, movement and velocity. Currently, his study still strongly supports one of the stereotypes towards children: children do not have a fully developed sense of time [2]. As a result of this stereotype, temporality [2-6], “the relation between story time and discourse time”, is supposed to be constructed with “chronological narrative” in children’s fiction [2]. However, there are many picturebooks that present quite complicated temporality, particularly J. Burningham’s Granpa [7]. In Granpa, neither story time nor discourse time is clear, which, conventionally should be difficult for children to understand.

In the research on how children respond to visual texts [9-12], studies on children’s response to temporality is largely missing, despite the fact that temporality is a “primary organizational principle of a narrative” [8] and a crucial element in deciding whether a story-telling is linear or not. To fill the gap, I chose to do a small experiment on how children respond to temporal relations in a picturebook. The chosen text is J. Burningham’s Granpa, because this picturebook contains outstanding complex temporality, namely “various deviations from straight, chronological narrative order” [6], which suits best the purpose of this investigation. I examined whether the children could understand the deviations of time in the picturebook: If they could, to what degree did they understand them? What skills did they bring to the meaning-making of the temporal changes? If they could not, how did they interpret the spreads to make sense of the whole story? Section 2 discusses how time and space are demonstrated in a picturebook, reviews relative studies on Granpa in terms of temporality and provides an original interpretation of the picturebook on the same subject. Section 3 is about methodology, and Section 4 provides data analysis. Section 5 concludes the study, discusses the limitations and the implications of the findings, and suggests some questions for future investigations.

2 · Time and Granpa

2.1 · Time and Space

Time is often discussed along with the discussion of space. In Piaget’s words, “time and space form an inseparable whole” [1]. This entity of spatiality and temporality finds its best demonstration in picturebooks. According to P. Nodelman [13], in picturebooks, verbal text has a greater potential for conveying temporal information, whereas visual text, spatial information. However, as L. Sipe [14] points out, words are “not purely linear” and images “are not purely spatial, either”. Visual text can express “the flow of time” by “a sequence of pictures” [6], but only with verbal text’s extension can such progress of time become definitive. That is to say, words and images have to fill each other’s gaps to compensate “for each other’s insufficiencies” [6]; in articulating time and space, temporality should be examined through the interaction between words and images.

2.2 · Temporality in Granpa

In Granpa, narration is simple but not linear, without any obvious chronological order, which makes temporality presumably difficult for children to grasp and understand.

Granpa has an ambiguous story time. We do not know when the story begins and when it ends. Page 1 shows an old man opening his arms for a little girl. This spread seems isolated as it does not tell us when, where and why this happens. We do not know where this little girl comes from or what brings her to the old man. As they are indoors, we cannot infer what time it is in the day and which season it is. “And” in the words “And how’s my little girl?” could suggest temporal relation, as “and” is “used to connect two clauses when the second refers to something that happens after the first” according to Oxford Dictionary. What have happened before “And”? This gap can only be filled with readers’ imagination. However, I doubt whether children will find this picture disturbing, because they will probably start to make their own story the moment they open the page.

The recto of the next doublespread on Page 2-3 makes the season clearer: it is probably spring because the characters are planting seeds. Except that, we still know nothing about the time of the day. The light yellowish outside the door of the greenhouse may suggest early morning or late afternoon, but nothing else makes time definitive. There are several colour pictures in the book that suggest the changing of seasons; however, as the words do not suggest the definite passing of time, and as the spreads between
each change of seasons are not equally distributed (which may presumably disturb children’s understanding of the time span), we may interpret the time span from the first spread to the last spread, if necessary, as either one year or maybe more than one year especially considering the girl in the last spread has longer hair.

When talking about the passing of seasons, J. Graham [15] states that “the book reaches winter when Granpa dies”. This statement could be questionable to those who do not relate death with winter or think Granpa is dead, because there are no words that tell explicitly the season nor the death of Granpa on Page 28-29. This doublespread, according to other studies on Granpa [15-22], is probably the only place in the book that may suggest the death of Granpa. Besides, the winter scene is only seen on Page 22-23. Page 24-25 has no reference of season at all. Many days or months could have passed between these two doublespreads. Page 30 with relatively cheerful colours does not look like a winter scene. Same with the previous doublespread, page 30 only depicts the girl, which may lead children to think that these two spreads might be related. In that case, they might conclude that the two spreads depict the same season which might not be winter.

Discourse time in Granpa is even more sophisticated. The temporal relations between words of different fonts, between words and images, and between the verso-sepia drawings and the recto-coloured drawings are full of indeterminacies. On Page 4-5, for instance, we do not know how and when the words with different fonts are uttered/sung respectively. They might not even happen in the same period if related to the images – “One man went to mow” may be sung by the children in the verso which seems to be a picture of Granpa’s childhood, and “Little ducks, soup and sheep” could be sung/created by the girl in the recto which should be at “present”, or vice versa. If children do not interpret the sepia drawing as the childhood of Granpa, they may also infer that the two lines of the lyrics may be sung by the piano man and the children in the verso respectively. On Page 14-15, for another example, the verso shows tea which seems to be an echo of “we must go back for our tea at four o’clock”, but we do not know whether this picture is a scene before, during or after the recto where they are heading for the beach. The words may suggest that this is an imaginary picture of what should happen after they come back from the beach, but it could also be considered as a picture of what they have before they set out for the beach, especially considering that there is a missing slice of the cake on the table in the picture.

Some scholars [6, 15, 23, 24] interpret the verso sepia drawings as the girl’s imagination or Granpa’s flashbacks/imagination. Of course there could be many other interpretations as well, but if we treat the sepia drawings as imaginary pictures, they could be considered as having temporal relation with the rectos because the imagination in the verso should be triggered by something happening in the recto, but temporally it occurs before the recto, so it can be viewed as a prolepsis as well. There are some doublespreads whose versos may not necessarily be imaginary pictures. For example, Page 2 (verso) could just be a depiction of a corner in the greenhouse. However, such pictures could be argued as imaginary pictures of the characters’ as well. In this way, readers, when experiencing the story time, also travel back and forward with the characters in their “psychological time”, though it is hard to infer whose “psychological time” it is.

The indeterminate temporality in Granpa challenges young readers in all aspects, while it also sets no boundary in children’s imagination. It was exciting to see how some children would respond to such an ambiguous text.

3 · Methodology
This case study is based on Arizpe and Styles’ [9] design which is effective and practical in collecting and analyzing data. I conducted semi-structured individual and group interviews with four eight-year-old children. This was apparently a small size of participants, but was in the nature of a preliminary study, and I tried to include as many varieties as possible as a means of identifying trends to research further. To do so, I chose two boys and two girls—one English child and three other children from Poland and Belarus—to examine what may happen when an English book is read in a multi-cultural situation; considering M. Mackey’s [25] suggestion of partnership in interviews a practical and easy way to get children involved, I divided the children into two groups for the reading, a boy-group and a girl-group, to examine gender difference in book-reading, if there was any; I let the children
read the book by themselves, with each group having one copy of Granpa, to reduce my influence on the participants as much as possible and to collect authentic data in their first reading.

In the first morning, as a warm-up activity, I let the children discuss the front cover and the back cover (on which the blurbs were covered). Then I asked them to read the book in pairs. I informed them that they could discuss with each other during the reading because I wanted to examine how they read and think. After the first reading, I asked them to draw a picture in response to the book “to access some of their knowledge which may not... [be] verbally articulated” [9], and also to examine their initial response to the book. After each child described his/her picture for me, I ended the morning interviews. In the afternoon, I interviewed them individually. Based on the data collected, I designed a list of group interview questions and interviewed the children all together in the next morning. All the interview questions asked during the children’s first reading are general questions without specifically mentioning “time” or directing them to consider about the temporal relations in the picturebook. This is because I wanted to examine if the children could notice the changing of time and seasons without my influence.

All the interviews were videoed and recorded. I expected the children to be distracted by the camera, but it turned out that all of them totally ignored the camera when actively participating in the reading and discussion. I transcribed all the information collected from the interview, “avoiding any distortion” [26]. The ethics of this research followed the suggestions given by R. Homan [27] in his The Ethics of Social Research. All the children are given pseudonymous and the school is anonymous in this paper.

4 · Data Analysis
4.1 · Children’s Responses to Time and Seasons in Granpa

I was genuinely amazed by my participants’ heated discussion about time and movement in this book when they were just shown a front cover and a back cover. Their discussion seemed to go against the general stereotype that children live “here and now” [2]:

I: What do you see in the picture [back cover]?

Harry: Looks like it’s snowing and Granpa is... he is just running around like a child.

Aleksy: How is it snowing?

I: Yeah, how is it snowing?

Harry: Cos seasons can change in a book [stretches his hands out, showing the movement of time].

Anna: Well, it can be they’re just going to a beach... and in another country then.

Harry: No, but season can change in a book.

The children were given the front cover first. Although none of them remarked upon the season on it, it can be inferred from their discussion about the back cover that they did not think the time and the place in the back cover the same as the front one. Harry’s comment on the change of seasons indicates his understanding that time could flow in a book. Anna’s argument may seem less logical considering Granpa and the little girl are dressed in winter clothes, but if taken into consideration that Anna comes from Belarus where she was used to cold weather, that now she traveled to a warm part of England, it could be easier to understand why she would argue that it was possible for the two characters “going to a beach... in another country”. As G. Kress [28] suggests, “Reading is a transformative action, in which reader makes sense of the signs provided to her or to him within a frame of reference of their own experience”. Here, Anna brought her experience to the interpretation of the picture, which may also be the reason why she claimed that places could change in a picturebook. If we take a further step, we may notice that Anna did not deny that time changed in the back cover, because when she suggested that the two characters might be travelling to another country, she indirectly acknowledged the passing of time – Granpa and the little girl have left the beach by the time.

Although Anna disagreed with Harry in terms of the season-changing (not time in general) in the back cover, she noticed that seasons change within the story:

Anna: Here is the autumn [points at Page 21], the leaves, here is the winter [points at Page 23], I think the years and the... [moves her hands suggesting the passing of time].

I: So something must happened in between ...

Anna: Yeah.
From Drawing Interview

I: What about this one [Page 12-13 (a doublespread)]?
Anna: It’s like... he gives her a last chance to be nice. [Turns to the previous doublespread, Page 10-11] this is the winter, cold [holds herself]. And here [turns the page back] is the summer!
I: So the season changes.
Anna: Yeah. And their relationship is changing.

From Individual Interview

It is remarkable here that Anna was performing the role of both the “teller” and the “told” [23] with both “intellectual” and “physical resources” [25]. By saying that Granpa gave the little girl “a last chance to be nice”, which was something not written or drawn in the picture, she not only told me what she saw but how she interpreted what she saw. Using her imagination, Anna filled the gap between words and images, and successfully made sense of those fragments of time and place. Her inferences on the changed relationship between Granpa and the granddaughter indicate that she was not only aware of the flow of time in the picturebook, but might be aware of the power of time – time could make things change.

Interestingly, Anna interpreted the doublespread on Page 10-11 as a winter scene. I should have inquired further why she thought it was in winter. Now I suspect that she felt the “coldness” from the negative space. The words and images probably gave her a sense of melancholy or loneliness. She might not articulate her idea well on this doublespread, but she expressed herself clearly when asked why the little girl in the empty chair on Page 28 was uncoloured: “I think she is so sad that the writer don’t colour her.”

This small group of participants did not show any difficulty in understanding the story time in Granpa. I suspected it was partially because the story time was shown in colour pictures which might be easier to draw children’s attention. My assumption was proved by children’s drawn responses to the book. All of them responded to the colour spread/cover according to their descriptions of their works. Later when Anna explained her drawing with the reference from the book, she only talked about the coloured doublespreads/spreads. The same is true of Aleksy who set his eyes first on the coloured recto when turning a page. When asked why, he said without hesitation, “Because this one is more colourful and I can see more from it”.

I: Why is this [Page 2] not coloured?
Aleksy: It doesn’t need to be coloured [shrugs].
I: Why do you think so?
Aleksy: Because like ... well there’s not much detail...

This may indicate that the participants considered the colourful pictures as the prime story line and the sepia-coloured pictures subordinate and less important. However, more research is needed to verify my assumption or investigate on children’s responses towards coloured and uncoloured pictures in terms of their reading experiences.

4.2 · Children’s Responses to Psychological Time in Granpa

It is surprising (in a positive way) that Aleksy, in his first reading, raised his hand and told me that the whole book could be the imagination of either Granpa’s or the little girl’s. He preferred to believe it all happened in Granpa’s dream: ‘I think none of that is true ... go back there [turns to the front cover], I think he is sleeping and he is imaging everything’.

Clearly, Aleksy was influenced by the front cover which is not the original front cover of Granpa, but to him, this Red Fox’s cover implied the signalled “theme, tone, and nature of the narrative” [6], thus set his mind at the idea that Granpa might be dreaming. When asked why, he answered, “The colours [on Page 21] aren’t very nice. They are all dark”. For Aleksy, dark colours seem to suggest something unreal. In addition, he did not believe everything happening in the book is true because he thought Granpa’s behaviour on Page 19 seemed quite immature, Granpa could not really catch a whale on Page 20, and the suggestion of “going to Africa tomorrow” on Page 26 was too absurd:

Aleksy: He can’t go to America, or Africa. So that’s why I think it’s a dream. [...] Maybe he’s dreaming about go to Africa. He really wanted to go that’s why he was dreaming about it.

Aleksy’s interpretation is valuable because he offered a seemingly
childish but actually reasonable inference of the book. He made such conclusion by looking at both words and images. By relating the sepia drawing with the words “Shall we go to Africa”, he decided that it showed Granpa’s imagination of himself going to Africa. Regrettably, I did not ask him why he thought Granpa could not go to Africa for real.

Aleksy is not the only one who associated “unrealistic” events in the pictures with imagination. Natali also believed there was an “imaginary world” in the book. For instance, she thought Page 6 depicted an imagination of somebody. “Because […] you can’t see a bear who has make-up on it”. Only one participant thought there was a flash back in the book. Anna, when asked about the sepia drawing on Page 18, considered it a “thinking back” of Granpa, and the toys in the verso were those played by Granpa when he was little. Her idea of a boy-Granpa was somebody who lived in Victorian age:

Anna: You know Victorian times, in the old times, the children have this kind of things [on Page 18], and after school, they can play … [tries to demonstrate for me how to play those toys]

I: Where did you get this idea?

Anna: We learnt about this. We come to the […] house. […] He [Granpa] is in Victorian time when he is the baby, the small boy. The question here is whether Anna had a rough idea of how long ago Victorian time is from now. If she did, what she said would mean she did not have a fully developed sense of time based on Piaget’s [1] study; if she did not, her interpretation would give no evidence of her concept of time, because Anna is not British, and we cannot assume that an eight-year-old foreign child knows what Victorian time means. Except for Anna, the rest of the children said nothing about sepia drawing being a memory. They believed that some sepia-coloured spreads depicted either imagination, something happened shortly before the rectos, or just a different place not related to the rectos. I was honestly surprised when the children told me that the picture on Page 22 could be the girl’s imagination of her playing with boy-Granpa. For experienced readers, we may immediately relate the words with the sepia drawing and assume that the picture is a childhood memory of Granpa. However, the children’s interpretation should not be judged as impossible, because there could be no rule or logic in imagination.

Moreover, the little girl could have known the old-fashioned dress and toys from TV, and related them to Granpa’s childhood in her imagination.

4.3 · Children’s Responses to Temporal Relations between Versos and Rectos

Although my participants except Anna failed to recognize a flashback, they did work out the temporal relation between the verso and the recto in some of the doublespreads by consulting the interaction between words and images. Aleksy was good at maths, which might be the reason why he liked to track a pattern in the book with logic. When asked in the individual interview why some pictures were not coloured, he struggled for a while and finally came up with a pattern that he thought was logical: “That’s not colourful cos that’s not happening in the same time”. By such inference, he asserted that Page 8-9 depicted two scenes in two different times.

I: They’re not at the same time though it’s raining?

Aleksy: No, cos even if it’s raining, it might last for longer, so it doesn’t actually happen in the same time … I think it’s [verso] happening in the morning and this [recto] is at night.

From Individual Interview

Aleksy: It is raining. It can be a different hour, or a different day, or … or a different minute, or a different second. One second is still something.

From Group Interview

Aleksy’s explanation shows a mature idea of time. Here I speculate that if Aleksy could articulate better, he could have told me that the rain in the verso and the rain in the recto were parts of the rain lasting from the morning to the evening, but they were different in a way that they were not the rain at the same time; even if it was just one second difference, it still made one picture more past/present than the other; time was successive, but succession did not make past, present and future the same.

Aleksy’s understanding of temporality in the book is evident in both individual and the group interviews. When we looked at Page 14-15 in the individual interview, Aleksy worked out three possible temporal relations between the verso and the recto – the sepia drawing might be something before, during or after what happens

I: So you think they are doing the preparation for the beach?

Aleksy: Yeah. And now I think that picture [Page 15] goes first and then that picture [Page 14]. Cos that is the one they have the tea and that is the one they arrive at the beach.

I: Why?

Aleksy: Because here it’s tea and it says “tea” … so probably they are away to go for tea there, but they haven’t been there because there [points at Page 15] they arrived at the beach just now, so that [Page 14] must be the second picture and that [Page 15] is the first, but there is no one sitting down [on Page 14], so I’m not sure. It might be at the same time. Yeah, it can actually at the same time, cos they might show pictures at the same time. This is when they arrive at the beach, and the chairs are ...

I: At home?

Aleksy: Yeah … and someone ate the piece of cake. […] Maybe Granpa ate before going? Wait! [turns back to the previous doublespread] How they … maybe she ate a bit … or the dog.

I: But if someone ate the cake, it must be ...

Aleksy: Before.

I: So there are three possibilities.

Aleksy: Yeah.

Here Aleksy’s inference about the temporal relations is extremely logical, which shows he was able to make meaning of the story by utilizing fully both words and images. Like Aleksy, other children were also conscious of the interaction between words and images. During the group interview, the children tried to convince me that Page 16 (verso) happened after Page 17 (recto). When asked why, Anna anxiously pointed at the words and told me immediately, “Because there! She said, ‘When I’ve finished this lolly can we get some more? I need the sticks to make things’”. The children tried to tell me that according to the sticks on the sand castles in the verso, no sticks on the sand castles in the recto, and together with the words’ suggestion, the verso clearly depicted the scene of the beach after Granpa and the little girl left.

The children’s responses towards the book also showed me how cultural custom could influence the construction of meaning. It is interesting to know that, Harry, as English, did not show any doubt on the tea spread on Page 14 being a scene in the afternoon, but both Aleksy and Anna regarded the tea spread as breakfast. Aleksy is Polish and Anna is Belarussian. Both countries have the tradition of having tea and cakes for breakfast. So I assume the children drew their conclusion highly based on their personal experience.

5 · Conclusions and Implications

Given the small sample and consequent limitations of this study, I asked some slightly leading questions shown in 4.1 and 4.3 that might have influenced children’s judgment, I could also have quered children further on why they had certain interpretations in some discussions in 4.1 and 4.2, and it would have been better to ask children to draw pictures separately because drawing together made them easily distracted by each other including copying each other’s ideas, nevertheless, the findings pose a challenge to the stereotype that children lack a mature sense of time: One of my participants showed mature idea of the logical time in 4.3. From his demonstration of the rain in diferent times, we could see clearly that he was conscious of duration and simultaneity of the logical time; in other discussions in 4.1 and 4.3, my participants showed their ability of telling the movement of the logical time because they actively demonstrated several versions of the chronological order of the story. These findings seem to contradict to Piaget’s theory given in the beginning of the paper. In 4.2, however, it is hard to conclude whether the children understood flashbacks because they interpreted some spreads which could represent flashbacks as imaginations, but their interpretations also make sense. To question further on children’s ability of understanding a flashback or temporality, we could, for example, use the same picturebook on more of the same age group children, asking more specific questions in terms of memory and checking their response. We have to ask them to justify their interpretations as well. The findings should also be verified by more studies on the same age group using the same picturebook and same research questions. The findings will be more convincing if the researchers
are able to replicate these findings by examining a large number of participants using the same picturebook. If, by empirical studies, we could come up with a theory on how children develop their ideas of time by reading picturebooks, it would vastly change our understandings on the development of children and childhood.

Additionally, some interesting trends emerged out of this research that deserve attention for future research: the children related time/seasons with feelings and vice versa; they responded more actively to coloured pictures; they performed high quality logical thinking in the meaning-making of the story; front cover influenced a participant in his understanding of the whole book; cultural difference seemed to play some role in their meaning-making process. These discoveries could be developed into research questions as: How do seasons affect children’s empathy with characters? How do children respond to coloured and/or uncoloured pictures in terms of picturebook reading experiences? How do children use logic in their meaning-making strategies? How much may front (and/or back) cover/cultural differences affect children’s understanding of a picturebook? Finally, how non-linear story telling in picturebooks may affect children in the development of their literacy skills emerged as an important theme which could be one of the interests to future researchers.

References

Abstract
Animation and live action film have different languages. They communicate with the audience by different paths. However in animation there are also different techniques that can create a new communication system. Rotoscope is one of them. While this technique creates a different animation style, at the same time it combines live action film’s language with the animation’s. It takes the realism of the live action film and turns it into animation’s realism. By this technique the film gains a new language. Rotoscoped animations can be considered not as child’s entertainment but as adult’s communication path. For these reasons rotoscoped animations generally tell the story of adults. In this paper rotoscope technique’s language will be discussed. The reality concept will be searched in rotoscoping. According to these, a rotoscoped film by Richard Linklater A Scanner Darkly (2006) will be analyzed.

Keywords
Rotoscope, Animation, Reality, A Scanner Darkly

Reality concept in rotoscope animation and a scanner darkly (2006)

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1. Introduction

With the inventions of new techniques, telling a store takes its shape accordingly. Photography, illustration and cinema are different mediums to tell a story. Among these, cinema, the moving image, has much more impact than others for the audience. ‘Telling the story’ turns into a ‘living the story’ with the moving images. Cinema also has its own techniques to do so. The forms that the cinema uses increase the cinematic experience’s quality for the audience. One of the forms that have a different language in cinema is animation. It should not be considered as a sub-genre of cinema but a form of it [1]. It’s expressing method is much more different even from the other forms of cinema. While animation is widely considered as a children’s entertainment thanks to the Disney Studio, with the Zagreb School’s ideology, animation turned into a form of adult’s sharing deeper ideas and contents [2].

While in live action films live objects and characters are recorded, in animation there is most of the time reverse of it. Animation is often done by illustrating on papers or computer screens. The characters and the objects are not real like they are in live action films. Animation creates its language in a virtual world. For this reason it can be said that live action films and animation are two different worlds. The former one stems from real world and the other stems from virtual world. However animation is an alternative way of expressing oneself and thus it can enlarge the scopes of its own technique, it can transcend the virtual world. Rotoscoping is one of these alternative ways, which transcends the virtual world’s scopes. This technique unions two different worlds and creates a different language and also meanings [3]. The technique itself has lots of things to say. In this paper rotoscope technique and its language is going to be discussed. To make the things clearer a rotoscoped film A Scanner Darkly is going to be analyzed.

2. Rotoscope’s Language

In 1917 Fleschier Studio applied for the patent of rotoscoping. The technique was simple. The live action film is being reflected onto a transparent ground and the artist draw the scene frame by frame from the beginning [4]. Rotoscope takes its source from the real life and turns it into a virtual life. Especially Disney tried to use this technique in order to make their characters more realistic. However this idea did not long last [5]. While in the beginning the technique was used primitively, with the advanced technology rotoscoping moves to computer’s environment. Bob Sabiston – who is a software developer especially for the cinema - developed a software to use rotoscope technique in computers. With this software Richard Linklater produced two different rotoscoped film one is Waking Life (2001) and the other is A Scanner Darkly (2006). Bob Sabiston first built this technology for his own projects. However as the technique creates its own language it became a desirable way of producing film. Although Sabiston became popular with the films of Richard Linklater he also worked with lots of directors to turn films into rotoscoped animation like Lars Von Trier [6].

Those films that are written above are just few examples. With the Fleschier Studios and independent filmmakers, there are much more examples of rotoscoping. The technique requires drawing each frame by hand. For this reason it seems a complicated work. The film should shot in live action format and after editing rotoscoping part starts. Artists show their skills in this part. In the film Waking Life (2002) 32 artists worked in rotoscoping [7]. Each artist shows their artistic interpretation for their own part and so the drawings of the sequences change from scene to scene which improves the subject of the film. As the film goes between reality (or being awake) and dream (being in sleep) waving shapes and changing contours and appearances of the characters have completed with the rotoscope technique.

Taking the live action visual into an animated form brings the first problem to the mind, which is reality. As the technique consists the live action visuals, real objects and characters stay almost as they are in the film. The animator or the illustrator re-creates the reality by drawing each object and character. The colors and shapes belong to animation world, they look like dreamy. However the characters and objects do not loose much from their being real. For this reason rotoscoped scenes look like a blanket has been put onto the reality. There is an animation layer, which tries to change reality but not let them loose much of it. For instance, in Waking Life, (2001) Julie Delpy and Ethan Hawke (we know them from Linklater’s previous film Before Sunrise (1995)) talks in the bedroom. The scene is animated with rotoscope but the
characters can be recognized easily. The characters turn into some kind of avatars for Julie Delpy and Ethan Hawke. The audience knows their faces from their previous films. But Linklater introduces new characters in new forms. However it is still possible for audience to get the animated characters are actually Julie Delpy and Ethan Hawke. It does not create a new virtual world, which is far from real world. Instead it stems from real world much more than any animation form. It does not fully create a new reality in virtuality like other animation forms. It just re-shapes it. The actions of the figures are almost the same with the real world. When the subject is animation one can always raise the question about realism. If the animation is done with puppets and real objects, this can construct a bridge between reality and animation for the audience [8]. However if we are talking about computer animation, the bridge between reality and virtuality diminishes. All the action and characters take place in a virtual world. In rotoscoping this bridge seems to diminish as the film is completed on computers. However the underlying reality stays. It does not cut off all the connections with the reality. All the actions, characters and scenes are more real than any kind of animation. Rotoscope gives the idea of reality but does not give it fully to the audience. The visuals turn into dreamy mode. Rotoscope tries to hide the reality from the audience by giving it much more than any other animation form.

Animation’s capacity is to resist ‘realism’. The story, techniques and character creations are different from the live action, which uses the reality. Umberto Eco notes that ‘absolute unreality is offered as real presence’ [9]. He uses the expression of hyperreality. Animation uses the reality in order to simulate it. By doing this it creates a hyper-reality. Completely fake things represent the real world and they indicate the objects in reality. Especially the computer animations create a second order realism. The environment and objects are coming from the real world but they construct a new reality in itself, on a virtual world. Rotoscope animation can also be considered as a computer based animation and the reality it creates is second order reality. The hyper-reality it creates is also different than other kind of animations. The hyper-reality of rotoscope is not so much different from the live action film’s reality. Unreal drawings become much more real in rotoscope. We see the animation layer however the reality stays underneath. For this reason it can be said that hyperrealism in rotoscope is more fake and real at the same time.

The sound is another important element in animation. In classic animation the sound is an outer element. Non-living objects do not have voices. The film is produced without any sound and afterwards the sound is added [10]. They are two different layers in the film. Visuals and sounds are connected later, in the editing part. However in rotoscope animation the sound remains the same with the live action shot. As the director first shoots the live action format of the film, the sound belongs to this part. It comes with the live action scenes. The only thing that is added to the film is a new layer of animation. Therefore rotoscope can be differentiated from other kinds of animation. The synchronization of the sound is much more appropriate and belongs to real life. The sound effects are also not virtual or computer generated they are the sounds of actual world. Bob Sabiston tells that the audiences see an interpreted face of an actor (that is drawn by an animator) but hear his actual voice. This creates an effect that audience pay much more attention to what character says. As the faces of the characters are unreal but the voices are real, the audience leave their biases about their appearances and the words those come out of from the character’s mouth becomes more important [11].

Another point in rotoscoping is the story that it tells. As stated above the film is shot in live action before animating it. Thus most of the scenes are derive from real world. The story of the film can also be shot in live action. However with the help of rotoscoping it turns into a different language. The director can simply choose
to screen the film as live action. What rotoscope makes, is putting more aesthetics to the film. Each illustrator or animator shows their talent as they re-draw the scenes. It is their decision whether turn the visual into something else or not. The colors and drawings get the attention of the audience. Once they get that attention they can direct it to any object they want in a scene. Some objects become much more important. The illustrator or animator can choose to underline an object or character’s importance by his or her drawing. The live action format can be changed according to illustrator and animator’s view as well as the director’s. It is also possible that a character or object can have a metamorphosis. The live action would not let the director to do that, because in real life there would not be such thing. However when the artist starts rotoscoping he or she can change the scene with the drawings. The character in the underlying layer, live action format, can remain same but animation can change it in the upper layer.

Rotoscope is also a lifesaver. A live action world can be turned into an imaginary world. While doing this it carries its reality with itself into the new layer. The problematic scenes can be retouched with rotoscope. If the quality of the video is low or the lightening is not satisfactory, these problems can be achieved while changing the film into rotoscoped version. The animator or the illustrator can delete some objects from the scene or add some. These all depend on his or her creative imagination and director’s will. He or she can also make objects bigger or smaller or change their positions or rotations. The thing is, the animator or the illustrator takes the real object and being stick to its real appearance they re-draw the shape. This process carries the live action world into the animation’s virtual world. From this point the artist’s creative world can do anything with the objects moved into the animation world. For example in a rotoscoped film Year of the Fish (2007) the fish gets bigger and bigger and achieves a size that is impossible in real world. From this point of view rotoscope carries the reality world into an animation and denigrates its dimensions. A character in the live action film can start swim in the air or has a metamorphosis. Rotoscope distorts the live action visual and creates a new language of aesthetics.

Uniting live action with animation carries the animation to another philosophic point. Rotoscopy consists more philosophi-
randomly and constantly. During the mission Arctor changes his name to Fred and in police station everyone knows him as Fred. His housemates Luckman and Baris are also addicts and Arctor tries to betray them without betraying himself. Baris, however, is a suspicious person and follows Arctor’s actions especially his relationship with Donna, the supplier and a friend of Arctor. Throughout the film Arctor questions his life and the effects of substance D. He wants a sexual relationship with Donna, but Donna does not want it. The detective, Arctor’s co-worker, wants him to track his housemates, Luckman and Baris. While doing this his housemates become more paranoiac and Arctor starts having trouble with them. Baris goes to police and tells them that Arctor and Donna are terrorists. Arctor has more hallucinations and hard times with the effect of substance D. The detective, Hank, reveals the reality of Fred’s and Arctor’s being the same person. After a crisis Arctor is sent to rehabilitation center. The center is called ‘New Path’ and it turns out that the people in rehabilitation works in the fields to produce substance D.

The film tells a story of friends who are addicted to substance D. The novel is categorized as science fiction. That makes the film not the child’s entertainment but adult’s communication medium. As using substance D cause people to have visions and hallucinations the best way to visualize it is animation. The rotoscope on the other hand puts much more meaning to the scenes and makes the film aesthetically satisfying. First of all maybe the best way to visualize ‘scrambled suit’ is animation. The suit changes the appearance in seconds and it does so randomly. One second the person seems like an Asian man and in another second it turns into a German woman.

Addicts that want to cover their identity wear this suit, so they can work for the police securely. Changing appearance from man to woman to a child implies that anyone can become an addict to substance D. All people from different nationalities can become a drug addict. With the rotoscope technique the scrambled suit comes into a reality. The character’s appearances, objects and the environment are almost the same with the reality. For this reason a thing that cannot be used in today’s reality, becomes real in animation’s hyper real world.

Film moves its reality into animation world. Well-known actors and actresses performed in this film and they are easy to be recognized, as rotoscope does not change so many things. The film’s rotoscoped layers, thanks to the animators and illustrators, keep the cogency of the characters. Keanu Reeves, Robert Downey Jr., and Winona Ryder can still be recognized by the audience, because the appearances of the characters are almost the same, as we know how they look in real life. The movements also take their source from the reality, which increases the cogency of the film. As the film’s target audience is mainly the adults, actions and characters getting as much closer as they can to the reality is desirable. For the audience the experience of the film is parallel with the subject of the film. They see the recognized actors and actresses but in a different form. The audience, too, experience some kind of hallucination in the film. They do not meet with the pure reality but a dream. The actions and characters are close to reality however the rotoscope layer causes audience to experience a dream or a hallucination.

As the film rotoscoped after it has been shot, putting some extra objects or removing them is also possible. The film does not need to shot in green screen or extra computer generated effects. Everything can be achieved during re-drawing the scenes. For example in the film, Arctor has hallucinations with the effect of substance D. His housemate Ernie Luckman turns into a cockroach while he speaks. Arctor sees him as a cockroach and his other housemate James Barris as well. This hallucination has been added after the shooting in rotoscoping part. Turning the character in a cockroach also reminds Kafka’s well-known novel.
Metamorphosis. In order to give the alienation fact (as Arctor uses substance D, he gets alienated from everything, even from himself and his housemates) Luckman becomes a stranger for Arctor. Metamorphosis is also an important fact in animation. Character’s changing from one appearance to another is widely used in animations. People in real life changes (or have metamorphosis) also, however this change is not that much clear as it is in animation. An abstract notion of change or metamorphosis is visualized with the help of animation. This is also a strong way of expression. The possible world of animation easily turns an abstract notion into aesthetically satisfactory images. Arctror’s hallucinations increase. While he watches the records of himself in the police station, he sees that his one nightstand suddenly becomes his desired woman Donna. He re-watches the scene over and over again and does not understand this sudden change. Donna also has a metamorphosis. Her changing from one woman to another is done with little details. In live action this change would be sharper and strange. However with rotoscoping Donna’s metamorphosis is fluid and understandable. Woman’s lips, eyes, nose and hair flows and takes another shape, which is Donna’s face.

The effect of substance D is presented to audience in the beginning. One of the friends of Arctor, Charles Freck, has a hallucination that thousands of roaches are everywhere, even on his dog. He collects all the roaches and puts them into a jar. However each time he takes those jams to the doctor, he realizes that the jams are actually empty. Audience also has this hallucination with the Freck. The scene suddenly fills with roaches. They are added in the rotoscoped level to the film. In live action format of the film there is no roach. The animators of A Scanner Darkly specify that in rotoscoping the best part is to have the live action format as low as possible. They do not need green screen shots or high budget productions [14]. The film takes it shape in the desk while animator’s turn it into an animation. Freck’s another hallucination comes into scene when he decides to commit suicide. A creature comes and starts reading Freck’s sins. This character has hundreds of eyes in his head.

4. Conclusion
Richard Linklater uses rotoscoping especially movies for adults.

The subjects of the films are either dreamy or hallucinative. His films discuss the line between real and unreal. For this reason using rotoscope in those films strengthens the subject of the film. In Waking Life (2001) and A Scanner Darkly (2006) characters, movements and environment stems from reality. He distorts the reality with little touches and uses the power of animation’s creating magical scenes. Bob Sabiston indicates that in order to decide whether to use rotoscope or not in a film, the director should ask himself the question ‘does this technique would improve the story?’. Linklater decided to shot Waking Life in rotoscope format because it would improve the philosophical background of the film. In A Scanner Darkly they wanted to create a movie that would look like a comic book. So as well as making the film in rotoscope format, they also tried to find the right artists or animators to make the film seen as a comics [15]. He both uses the advantages of rotoscope technique, like shooting the film with low budget and in low quality, adding or removing objects from scenes without using green screen or other techniques and letting animators and illustrators freely express themselves so that film gains more aesthetic visualization and supporting the film’s subject with its technique.

Combining live action’s grammar with animation’s creates a new language. Rotoscope’s new language communicates differently while it focuses generally on reality concept. Bob Sabiston’s and Richard Linklater’s co working and creating these kind of films digs more philosophical questions. So Linklater’s and Sabiston’s works are not just pure entertainments for the cinema but they also contributes to the film language. A Scanner Darkly should be considered as an adaptation movie as it is screened from a book. However this adaptation is really different from other examples. Rotoscope’s language both enriches the subject and makes it possible to shoot a science fiction movie without unnatural computer effects.

References
Observations on the evolution of the contour line in animated characters.

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Abstract
From the viewpoint of Drawing Contour constitutes the line that defines and contains the shape and volume of any drawn object. From a perceptual standpoint, it is what distinguishes a shape from its background. In the past hundred years the contour line that defines animated characters has mutated through diverse styles, many of them a direct consequence of the technologies available at the time of their creation. Technological breakthroughs in animation such as Rotoscopy, Celluloid Cels, Digital Ink and Paint or Cel Shading led to the evolution of the contour line, influencing the style and appearance of cartoon characters. How can one expect the contour line to develop, in times when the character of this line no longer has to rely on the particular drawing styles of the animator, but can be created semi-automatically through software extrapolation?

Keywords
Animation, Cartoon characters, Drawing, Contour line

Observations on the evolution of the contour line in animated characters.

Sahra Kunz

1. Contour and Outline

The term contour can be used both in the knowledge areas of visual perception and of drawing. In visual perception, the term edge defines a discontinuity of a surface, or the passage from one object to another. It does not depend on the observer’s viewpoint because it refers to specific characteristics of the object, which define it as a three-dimensional entity. In the study of drawing, the definition edge can be transposed either into a contour or into an occluding contour. The first term defines the outline of the object as seen by an observer from a certain viewpoint. This contour is specific to the point from which the object is being observed, and defines its relationship to the background, or to the other objects in a scene or group of objects. When referring to an occluding contour, one is referring to a contour that partially obstructs the view of an object that is further to the back. Outline is a term commonly used in drawing, and refers to the boundary the mark creates on the drawing surface, containing a shape, color or shading - the outline may or may not correspond to the contour or occluding contour. If the artist aims to create a realistic type of drawing, the outline will correspond exactly to the contour of the object.

In order to better distinguish between contour and outline as far as drawing is concerned, one can turn to the definition proposed by the artist Kimon Nicolaides: “‘Contour’ is commonly defined as ‘the outline of a figure or body’ (…) We think of an outline as a diagram or silhouette, flat and two-dimensional. (…) Contour has a three-dimensional quality; that is, it indicates the thickness as well as the length and width of the form it surrounds.”

Following this definition, the word contour will be used to describe the line surrounding animated characters.

Both visual perception and drawing share a notation system, whose elements are called junctions. Their correct use in a line drawing is what represents depth when no shading is present. They are fundamental for depth perception and as such extremely important both in drawings and in animation.

The use of junctions (especially T-junctions) in a line drawing provides depth information, so when there are a lot present the drawing tends to be interpreted as more “realistic”. The contour of animated characters has evolved a lot in the past hundred years, its nature and style being affected both by innovations in technology and aesthetic trends at the time of their creation. This evolution was also punctuated by a more or less intense use of junctions in the drawings, which, paired with varying thicknesses of lines can give a more or less realistic look to cartoon drawings.

2. Gertie the Dinosaur and How a Mosquito Operates

Winsor McKay was one of the most distinguished pioneers of the early days of animation. An illustrator by profession, he created the Little Nemo in Slumberland comic strip series, which was published in the New York Herald between 1905 and 1911. He was an accomplished draughtsman and illustrator, with a keen eye for both accuracy and caricature.

In How a Mosquito Operates (McKay, 1912), a short animated film based on his comic strip Dream of the Rarebit Fiend (McKay, 1904-1925) one can observe that he chose not to use the dense black backgrounds he used in the printed version. The mosquito itself and what few backgrounds elements that appear in this film are drawn with a very fine contour, probably, in the case of the mosquito, to enhance its spindliness. The human “victim”, seen mainly asleep, in a profile view, is contoured in a much thicker stroke. This plays well as a visual reference to the visual “border”
In Gertie the Dinosaur (McKay, 1913), a short animated film whose idea probably sprung from the illustrations of pre-historic animals McKay did for the American Historical Association [5], the contour of Gertie again helps to define figure-ground relations and depth.

The background is rendered without any type of shading, and with a fine contour outlining the shapes of the pre-historic setting. Gertie, on the other hand, is drawn with a much thicker line, in order to make her stand out from the background (some black shading can be seen on her feet, a shadow adds depth when she lifts them, and the inside of her mouth is also blackened). She is drawn using a lot of occluding contours and junctions, which give her drawing a rather three-dimensional look, even though there is no shading.

When a rotoscoped Winsor McKay appears to direct Gertie, he is the only figure that is heavily shaded in black. This makes it possible to clearly see his comparatively small figure in relation to the other, larger elements such as Gertie. The other characters featured in this film, such as the sea serpent, the mammoth and the four-winged lizard are also drawn with a heavier contour than the background.

The graphic language McKay uses in his films is clearly that of a draughtsman, who creates depth in the kinematic “window” on a single sheet of paper, and where the distinction between figure and ground relies heavily on the contour thickness used. In a medium that at this time had no technical ability to reproduce multiple planes or color (even shades of gray were difficult), it is clear that the use of contour and junctions were the only available tools to create some depth. [6]

3. Koko the Clown and Betty Boop

Although Winsor McKay had already used early formats of rotoscopy in the first years of the twentieth century, the patent for the device named Rotoscope, which made this technique easier to use was awarded to Max Fleischer, a commercial artist and cartoonist, in 1915. Around that time, Max Fleischer, a multi-talented man working for the magazine Popular Science, got the final push to develop a mechanical device to make cartoons look better from his boss Waldemar Klaempfert (editor-in-chief of Popular Science), who at the time was frustrated by the jerkiness of cartoons. He decided to do this through the reproduction of human movement, made possible by a machine that took a succession of pictures of objects in motion, which could then be traced in pen and ink. [7]

The first animated series produced by the Fleischer Studios was Koko the Clown, featured in the Out of the Inkwell series (the first episode was released in April of 1919). Audiences loved the mix of live action and hand-drawn cartoons. [8]

Koko the Clown posed a particular challenge to the artist’s drawing style: as the main character (rotoscoped from footage of Max Fleischer’s brother Dave dressed as a clown) often interacts with actual footage, such as Max Fleischer’s hand, it would have been difficult for a normal contour drawing (black contour on white ground) to be sufficiently visible. As such, Koko is mainly drawn in an inverted style, with a white contour surrounding his body, which is colored black. This gives his shape a lot more solidity, and allows for him to contrast more clearly from his background. The interior folds of his clothing (junctions) are contoured in white, while his hands and face have a thicker black contour than, say, the interior lines that divide his fingers. Almost all other characters in this series follow the same style, with
mainly black filled in bodies. This allows for them to stand out very clearly either against white or live footage backgrounds.

When Koko the Clown lost popularity to Mickey Mouse, the new character created by Walt Disney Studios, Fleischer was working on Dizzy Dishes (Fleischer, 1930), a cartoon featuring a tough piano-playing dog named Bimbo. When Bimbo needed a female love interest, Fleischer created Betty Boop. [9] She became extremely popular, perhaps partly due to the rather unusual style in which she was drawn.

Betty is assembled from two very distinctive parts: her body and her head. While her body retains more realistic features and proportions, her head is gigantic in proportion and is drawn in a much more caricaturized style. In her films one can see a more widespread use of shades of gray and washes than in earlier films such as Koko, but the Fleischers still opted to use a very strong contour for this character. Her clothing, hair, shoes and eyes are usually black, which give her figure some solidity. When the contour defines the outside of her shape, it is much thicker than when it defines an inner element or fold (a junction). This can appear quite strange during the character’s movement, as lines representing the same part of the body will change thickness as the character moves.

4. Mickey in Steamboat Willie and the Band Concert

The first production of Disney Studios to be screened, Steamboat Willie (Ub Iwerks, Walt Disney, 1928) shows us the first draft of the character that would become Mickey Mouse, and is representative of a contour line inherited both from the earlier legacy of silent films (such as Felix the Cat, 1919-1916) and from technical constraints. The fact that this film is still in black and white, and that the innovation brought about by the multi-plane camera is still some years off (it was invented in 1933 by Ub Iwerks) [10] means that use of flat black and white surfaces, allied to the contour line were the only tools available to portray both the actions and the personality of the characters. As such, in Steamboat Willie one can see an extremely thick contour defining the characters (the same can be observed in the other film featuring Mickey that was also released in 1928 - Plane Crazy). There is some use of junctions, in the folds of Mickey’s shorts and the cuffs of his shoes. This contour is replicated in the other characters, and is also used in some aspects of the background, where only limited shades of grey were used. It provides a necessary contrast of the characters against the background.

This first representation of a scrappier, thinner Mickey was to change dramatically over the years: “The Disney artists transformed Mickey in clever silence, (…) they lowered his pants line and covered his spindly legs with a baggy outfit. (His arms and legs also thickened substantially--and acquired joints for a flopper appearance.) His head grew relatively larger - and its features more youthful. The length of Mickey’s snout has not altered, but decreasing protrusion is more subtly suggested by a pronounced thickening.” [11]

The Band Concert (Wilfred Jackson, 1935) is a good representation of how Mickey’s shape and contour were changing. In a period of less than ten years, his limbs started to thicken, and his face started to get rounder - visually, present day Mickey is nothing more than a distant cousin of that original character. The introduction of three-strip Technicolor in Disney films (in Flowers and Trees, 1932) [12] allowed for a greater differentiation between characters and background, and, as such, it also allowed for the characters contour line to grow thinner. In this example particularly, one can quite clearly observe the presence
of many occluding contours, and of a large number of junctions. They give the figures more three-dimensionality and depth, which emphasizes the frantic action that takes place during the film. The thickness of the contour stays relatively constant, except for some thinner lines on the inside of the characters. Mickey is dressed in an extremely oversized band uniform; the representation of the folds in the fabric becomes not only a matter of realism, but also part of the comedic matter. This film represents one of the many steps than Disney animators undertook in order to create increasingly more realistic and more smoothly animated characters, an achievement largely based on the refinement of the contour line and the increased use of junctions.

5. Gerald McBoing Boing and Rooty Toot Toot

UPA (United Productions of America) studios were founded partly as a result of Disney Studios animator’s strikes in 1941. This break from what was then a fully-fledged entertainment philosophy was to mean more than just a change of production methods. The founders of UPA Stephen Bosustow, Zachary Schwartz and David Hilberman were intent on creating a new style in animation, as far as possible a cry from Disney’s “over-animated” productions. They aimed to integrate current aesthetics and artistic influences in their productions. Also, their films used a limited animation style, in which movements were less fluid, and there were less in-betweens.

Adapted from a story by Dr. Seuss, in the short film Gerald McBoing Boing (Robert Cannon, 1951): “(...) Walls in the background disappear; spaces are defined by a random piece of furniture or two; chandeliers dangle in mid-air. The character designs are flat, two-dimensional - unequivocally they are drawings, not meant to be mistaken for anything else. The animation is precise and balletic, and the colors shift from scene to scene expressionistically” [13]

At a first glance, the space in which this animation takes place makes little sense, as objects seem distributed in an apparently depthless setting. But, on closer inspection, most perspective cues are correct, except for the fact that many of the elements one expects to encounter in a depiction of three-dimensional space have been removed. Characters in this space still move in depth, but we have only a change in their relative sizes to see where in the space they are.

Gerald McBoing Boing is the perfect example for a new, more radical use of the contour line. Instead of doing what was usually its main function (containing areas of color or pattern, while defining the shape of a character), it constitutes more of a free line, not necessarily always coinciding with the character. In the beginning of this film, we can see the character of Gerald (and those of his parents) being constructed by rather loose and fluid brushstrokes. This action indicates than more than being a fixed reality, the character’s contour is a mutating entity, traced with a thick black line. There is almost no indication of depth in these characters, a very limited use of junctions (almost no folds in clothing are represented), and a very basic use of occluding contours. The effect of this use of line is that these characters, unlike those created by Disney, for example, have a flatter, less three-dimensional presence.

In Rooty Toot Toot (John Hubley, 1951), another one of UPA’s successful productions, Frankie’s character is defined by a contour that negates its main function, that of containing a surface or a color. Her contour is often transparent, and one can often see her body through her arms. In this film, contour becomes an expressionistic resource, as it retains neither shape nor color.
consistency.

Frankie’s lawyer is a bold white figure with no exterior contour, while the bartender has a very thick black contour, contrasting with the white contours of the glasses and bottles around him. As in the rest of the relatively uncohesive space, junctions are used very sparingly, and often not at all.

6. The Simpsons
The Simpsons (Groening 1989–present) is a TV show that portrays a dysfunctional fictional American family. When the show started, more traditional cel painting techniques were used, in which the animators’ drawings were transferred to celluloid and then hand-colored. [14] Because this series has been airing for such a long time (23 years at present time), its production underwent a series of technical transformations, as more modern and less time-consuming animation techniques became available.

In season 14 (2002) the traditional cel painting technique was replaced by Digital Ink and Paint [15], a technique in which instead of being transferred to cels, the animators’ drawings are scanned into a computer, where they are colored and processed using one or more of a variety of software packages (such as TVPaint, DigiCel Flipbook, or ToonBoom).  [16] Groening started using the technique of cel-shading (it renders 3D models in a way that makes them look like drawings) in his other, not quite as successful TV series Futurama (Matt Groening, David X. Cohen, 1999). This technique is used in many of the more futuristic scenes, mainly for mechanical objects such as cars, planes and spaceships, but also in more difficult perspectives and more complicated camera set-ups. It is now used in a variety of scenes in The Simpsons, as well as in Futurama. These technical evolutions also meant that the quality of the contour line in The Simpsons has changed and evolved in step to the technical innovations used. In the earlier episodes, in which traditional cel painting was used, one can observe that the contour is a more irregular line, presenting very little junctions. The characters appear flatter and more two-dimensional. With the introduction of Digital Ink and Paint, and also of cel shading, the line, although altering little in thickness, acquires a much more regular look. Its thickness becomes consistent, and junctions appear more frequently. It is debatable which of the styles is most effective in portraying the characters.

7. Paperman
Paperman (John Kars, 2012) is an animated short that tells the story of two characters falling in love in 1940’s New York. What makes this a relevant film in this context is the technology used in it. It is a hybrid animation, combining 3D and hand-drawn animation techniques, a fact that in itself would not be extraordinary, but in this film the hand-drawn parts have been mostly done using a digital technique. Disney Studios developed a method that informally is referred to as “The Paperman Method”, using a software called Meander, which was specifically developed for this production. This software: “(…) can predictively draw the motions of characters to speed up the animation process. (…) Once the lines could be captured correctly, they could be made dynamic. The computer nudges the hand-drawn lines of a frame into the right positions for the next frame in a process called Final Line Advect. If you can imagine all the curved lines in a rustling dress, you can suddenly see the whole animation problem as Disney’s engineers did.” [17] The creation of this software anticipated the gutting of Disney’s hand-drawn animation division, which took place in early 2013. [18]
The visual characteristics of the contour line in Paperman result from a combination of hand-drawn lines and computer software interpolation. The contour line is drawn directly onto the 3D model, and the software “predicts” how it will behave when the scenes are animated and the figures are moving [19]. All junctions are correct both from the perceptual and from the drawing standpoint, as they are mapped directly onto the 3D model. In this case, the contour line IS the actual contour of the characters, as it is bound inextricably to their shape. Visually, this presents as an extremely “clean” and regular drawing style.

Conclusion
In the past hundred years technical developments in animated productions have succeeded each other at a vertiginous pace. This means that the type of drawing (and subsequently the type of contour) represented in animated cartoons depended not only on the drawing skills of those who created them, but also on the introduction of these new techniques. The lone animator lost ground to large production setups, and the increased massification of animation through television and large scale cinema productions meant that these techniques tend to be evermore labor saving. The creation of the contour of the animated character tends to be increasingly automatized, and visually this has the consequence of creating a more consistent and less expressive line, although in newer production methods junctions can be portrayed with maximum correctness. In the future one will see less and less intervention from animators in individual drawings, and a more widespread use of computerized technology. At this point, and perhaps for some time to come, the contour line will correspond exactly to the contour of the animated cartoon, as it will be entirely based on 3D technology.

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9. Ibid., p.50
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Interactive multimedia application of Ria Formosa (Portugal) for educational purposes (FORDID).

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Abstract
Due to the constant need to improve educational tools by means of fast evolving e-technologies, the Centre of Marine and Environmental Research (CIMA) assumed the responsibility of creating effective means of communication between the general public and research community, through interactive multimedia platforms (educational applications). Following the success of their first applications (GuaDid and MonDid), the challenge to create and innovate was further continued resulting in a new application – ForDid. The latter was developed within the framework of SIHER project, which embraces a multidisciplinary study embracing the Ria Formosa Lagoon area.

ForDid distinguishes itself from the previous applications for Guadiana and Monchique by following a systemic philosophy that synthetizes and organizes the existing information in order to make clearer the countless relations coupling the components within a coastal stretch, shallow lagonal system. This application combines multimedia softwares (SWiSH Max4 and Prezi) with the aim to organize and graphically edit the scientific information acquired within SIHER research activity and other research projects.

The interactive nature of the application will not only facilitate the learning of earth and life sciences but will also enhance the environmental, socioeconomic and cultural value of the Ria Formosa, establishing a base for the comprehension of its complexity and need for conservation. This paper shows the methods used and their outcome in the process of designing ForDid for the first public feedback.

Keywords
Ria Formosa, ForDid, Multimedia application

1. Centro de Investigação Marinha e Ambiental (CIMA), Universidade do Algarve, Campus de Gambelas, 8005-139 Faro, Portugal
1. Introduction
During the last decade the Centre of Marine and Environmental Research - CIMA, University of Algarve has taken the responsibility of creating multimedia educational applications about the most significant elements of the Algarve’s natural patrimony heritage. The aim of the undertaking was to promote the science based knowledge in the territorial management, school and nature conservation communities. One of the undeniable advantages of these types of resources is their versatility, facilitating the visualization of the information in an interactive and appealing learning experience [1] [2].

These applications are visualised as guides for environmental education purposes, integrating a vast range of information. The first applications focused on two environmental landmarks: the Serra de Monchique igneous massif (MonDid [3]) and the Guadiana estuary (GuaDid [4]). Both applications were structured to cover three scientific areas, geology, biology and geography. Data and results of their parent research projects were used to create an updated insight to these different types of environments.

After the successful launching of both applications [5][6][7][8] and because of the socioeconomic and environmental importance of Ria Formosa lagoon system, the latter became a target for a new scientific information and educational application.

In order to create this application we used SWiSH Max4 software that is a flash creator tool that can be used for a range of applications from animation to web site interfaces. The main advantage of this software is its versatility and simplicity of use of the programmer to create a flash based application. The use of components in flash allows the creation of movie clips within animations controlling the appearance of objects, as well as their timing [9]. As so, it was used to build the applications done by CIMA. However, this presents some limitations when we pretend to create an application with a large density of proposed information. To solve these limitations, we complemented the application with Prezi [10], in which its functions of zoom and layout enables users to grasp, understand, and better remember the underlying ideas and messages, as such allowing easier perception of the intricate relations.

With this new application we aimed to widen the scientific scope and besides geology, biology and geography also include all economic, cultural, and historical information in a systemic approach. The resulting application, which was named ForDid (acronym from Formosa Didactic), portrays the complex system of the Ria Formosa coastal lagoon in an innovating way, becoming a fast access, intuitive and user friendly tool which takes the advantage of both Prezi and SWiSH Max4 object animation capabilities.

2. Methodology

Data Collection
Data were taken from the application’s parent research project: SIHER, that focused on the reconstruction of the morphological evolution of the Ria Formosa in the last ca. 10,000 years. Additional data were collected from other research projects carried out by the university [11], governance institutions [12], local museums, libraries, businesses and residents. Field campaigns played an important part in getting numerous new photographs to illustrate the application and to produce new and more accurate geographic referenced cartography.

Software
The information was divided in five thematic subsystems focusing on Fauna, Flora, Socioeconomics, Hydrology and Geomorphodynamic. Each of these subsystems was subdivided in several themes in which the information was incorporated into several movie clips and scenes using SWiSH Max4. For the transition between movie clips within each theme and group, buttons were created using images and text boxes so that the clickable area is larger and more attractive. The path used by the animation when the buttons are clicked is defined through action scripts within each button.

In order to make the movie clips more interactive several effects were used, taking in to account that they should not be too excessive so that the user would not lose the perception of where he was within the various system loops.

Page layouts were created taking into account their visual appeal, colour, photographic images and the disposition of its components in order to be intuitive for the potential user.

For an easier comprehension of the multiple relations and
feedbacks existing within the system, a conceptual diagram was created by means of Cmap Tools [13]. To aid the user in terms of spatial relations, this diagram was superimposed over a 3D digital terrain model (DTM) of Ria Formosa. The density of proposed information also imposed the need to arrange visual animation tools that would allow easier perception of the intricate relations. The software which enabled us to solve this question was Prezi. Although it is normally used in conference formats it’s almost unlimited workspace, with motion path definition and zooming capabilities, was combined with the SWiSH Max 4 flash videos, in order to enhance the dynamic character of ForDid.

In order to stimulate the visualization of the Ria Formosa virtual geography we also included georeferenced maps using ArcGIS software showing the location of key sites in the system. ArcGIS is a popular geographic information system (GIS), ie. formal platform, on which we loaded multiple datasets (altimetry, man-made structure locations, water bodies, etc.) to create editable layers of spatially referenced items.

3. Results

The following images illustrate the layout and serve as a sample of the complexity and dynamism of ForDid. The first, entry level of the application starts with the logo and its organization so that the user can see its content (Image 1) while the conceptual diagram that organizes and simplifies the complexity of the system is displayed separately (Image 2). As an example of the continuity within a level, the layout of the five systems within (Image 3), the cover of the animations of each subsystem (Image 4) and an example of a few themes within the subsystems (Image 5) are given.

F1. First level of the application with the ForDid logo. In this section user can observe the application flow diagram, showing ForDid’s organization and division in five subsystems within a.

F2. The conceptual diagram that organizes and simplifies the complexity of the larger and general system, allowing the user to clarify and comprehend the interactions between subsystems and activities that maintain the larger and general system Ria Formosa.

F3. Display of the five subsystems interacting within. From left to right, Geomorphodynamic, Socioeconomic, Hydrologic, Botanic and Fauna subsystems.

F4. Images of the covers of each subsystem; on which the user can increase his knowledge by clicking on images and objects.
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4. Discussion
Although not yet completed due to the dimension of the whole undertaking, the creation of ForDid’s functionalities were sufficiently advanced to be introduced for testing by the groups of students from different areas (biology, economics and sociology courses) in order to get more concrete criticism. In general the acceptance of the application’s appearance and incorporated information was very favourable. The prospective end users gave, in particular, a warm approval of the functional interactions between the subsystems, which gave them a possibility of a fast overview of the otherwise complex reality.

This proves that acquiring knowledge is fast evolving from the exclusively paper based cognitive process to the multimedia based interactive learning especially in its initial part [14]. Even if it is not immediately evident that ForDid will be able to not only portray the entire complexity of the Ria Formosa system in the educational practice but also to appeal to other social groups. These groups like tourists, conservationists, environmental managers will later be consulted and asked to express their opinion.

5. Conclusion
Even though this application is in its final development phase as the data set is concerned, it will be further improved in terms of functionalities and aesthetic aspects, according to our surveys. It will also be introduced an evaluation test-your-knowledge interface that will enable the users to check how effective the process of ForDid is.

One of the final goals will be the introduction of ForDid to larger and more diverse groups in the regional communities for the purpose of knowledge sharing in the public domain, promote cultural value of the Ria Formosa and the need for its conservation.

Acknowledgements
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Abstract

Animated travel diaries are an interesting subgenre of documentary short films, influenced by the personal expression and the artist’s subjectivity, where animators revive an initiatory experience or encounter through the pictures they registered in their journey. This article will examine three significant films at recent auteur animation panorama, such as the Oscar® Awards nominee Madagascar, carnet de voyage (Bastien Dubois, 2009), Ámár (Isabel Herguera, 2010) and Viagem a Cabo Verde (José Miguel Ribeiro, 2010), which demonstrate the vitality and attractiveness of art films where the sketchbook plays an important role at the final expression of the film.

Keywords
Drawing, animation, travelogue, experimentation, diary, sketchbook.

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Introduction

Animation, as the enduring reproduction of a movement or of a fleeting instant, has a privileged relationship with memory. This memory can be registered at the artist’s notebook as a shape, a research or a sketch, which anticipates a future animated gesture, a character or scenery. The relationship between animation and a specific kind on graphic diary, the travelogue, has led to an interesting short film subgenre: the animated travel diary, a storytelling form closer to the documentary gaze, though influenced by personal expression and the artist’s subjectivity.

This article will examine three significant films at recent auteur animation panorama, such as the Oscar® Awards nominee Madagascar, carnet de voyage (Bastien Dubois, 2009), Ámár (Isabel Herguera, 2010) and Viagem a Cabo Verde (José Miguel Ribeiro, 2010), which demonstrate the vitality and attractiveness of art films where the sketchbook, instead of remaining hidden in the kitchen prior to production, plays a protagonist role at the final expression of the film. The first section of this essay will review the qualities of the animator’s sketchbook as a memory archive, and how this is visually translated to film. The second section analyzes these films as their authors’ testimonies, midway between the personal and the documentary. Finally, the third section will notice the new narrative forms that travelogues have suggested in other spaces, like the art gallery or the field of experimental animation.

2. The Sketchbook as Memory

Animation itself is the hard copy of psychological memory.

Paul Wells, Drawing for Animation [1]

Animated travel diaries are quite a crossroads of genres and trends at current animation panorama. On the one hand, closely related to hand made drawing challenges the current dominance of digital animation, whether CGI or vectorized drawings. On the other hand, their almost autobiographical point of view collides with the documentary hue of these narrated trips, which reveal to us diverse cultural roots. The coincidence in a recent period of three relevant films like Madagascar, carnet de voyage, Ámár and Viagem a Cabo Verde shows that animation needs other perspectives and differing attitudes to the established ones, a renovation that apparently can only come from auteur short film.

The idea of animated diary has an evident precedent in the chronicle drawn by Nedeljko Dragić at his film Dnevnik (Diary, 1974), where the author’s identity is dissolved in the metamorphoses of the self by using different techniques, languages, and aesthetics ranging from figuration and abstraction, featuring a portrait of urban life that includes social criticism, irony and eroticism. Also, Vuk Jevremović’s short film Tagebuch (Diary, 2000), a direct heir of Dragić’s movie, emphasizes the subjective viewpoint, with the eyes of the protagonist as the camera, introducing in this flow small breaks where routinary life acquires color. Both films express their authors’ sensibility while the question of their personal identity remains in the background, since any viewer can be identified with the experiences and circumstances depicted in these films.

However, in the three animated films analyzed in this essay, the idea of a sketchbook—as a record of visual memory—prevails over the idea of a written diary. The animator’s chronicle takes the form of images and annotations, creating an inescapable bond between animation and drawing to build ideas and memories. As Nina Paley notes, "drawing is an aid to thinking. It’s a way to work out ideas, just like writing an outline or notes. It doesn’t matter what these sketches look like, just as it doesn’t matter what your handwriting looks like when you’re making notes" [2]. Thus, animated travel diaries are an appealing form for artists who became animators, because the final form of these films highlights their own creative process.

So, Madagascar, carnet de voyage, Ámár and Viagem a Cabo Verde defy the convention of aesthetic unity that usually characterizes the animation industry, in favor of a bewildering variety of strokes, designs, colors and techniques. In them, Concept Art work—the phase of production that precedes the realization of a film—becomes visible in the final film. What these films celebrate in first place, then, is the act of drawing for its own sake: in animated travel diaries, artistic drawing is released from its confinement at preproduction framework to reach the visible surface of the film, because the trace represents the animator’s voice. These films bring to the foreground the physical presence of the sketchbook, and everything is composed onto its pages like a
moving collage —no other than the animated memory of the artist. The sketchbook also attests to the artists’ learning process and demonstrates their constant exploration, as the veteran Professor Peter Parr explains [3]:

A sketchbook can be as private or as public as you like. The fact that you have one, and it is tended regularly, allowing you to observe, record, translate, fantasise and have fun, is testament of your commitment. [...] Its primary use to you was its creation. Your sketches will support each other in charting your search. In addition, the presence of elements such as notes by hand, glued boarding passes, labels and reminder sticks, reinforce the testimonial character of travel books that inspired these films, and the corporeal presence of their pages. No wonder, unlike the motion picture—which only exists as a projection and may be seen either in theaters, screens or interfaces—the sketchbook is a genuine and unique object, which belongs to the physical world and it acquires value as it is used by the artist: the signs of its employment, its own wear, not only make it unique, but also truthful. It brings an unspoken bond with real life.

In this sense, Ámár deeply respects the essence of the book as a memory, showing in many moments Isabel Herguera’s drawings from her sketchbooks—not animating them, but only adding ambient sounds and camera movements (Fig. 1). The film animation is done through a technique of black inked drawings, and at the end we see a cathartic scene where the street musicians and other characters from Herguera’s sketchbooks converge. Meanwhile, Viagem a Cabo Verde also shows the animator’s inks and washes in his notebook taken during the course of the trip, but in this case, most of them suddenly come to life, moving subtly (Fig. 2). In several scenes of the film, the artist appears drawing: when he distributes multiple pages on the floor to draw an ancient tree, or even appears inside his own notebook, because the scenes of his remembered journey are indistinguishable from the notebook itself. The two artists’ graphic personality is made evident in both films: in Herguera’s film, her drawings are stylized, gestural, with vibrant and even arbitrary colors, close to abstraction and symbolism. In Ribeiro’s movie, on the contrary, many of his drawings are detailed, realistic, with elaborated depiction of those who are portrayed.

In Madagascar, carnet de voyage, Bastien Dubois goes one step further in his notebook’s animated recreation, since almost every scene of the film acquires volume digitally (Fig. 3). Using a mixture of 3D animation and hand painted textures, the smallest details —irrelevant to the story, but that enrich the atmosphere—are offered in three dimensions: the woman who sells fruit to the bus travelers; a wader in a pond; a woman bathing in the water, etc. Additionally, the movie offers little scenes of hand-made animation, such as car toys —stop-motion-animated—, or the market scene made with embroidery (Fig. 4), combining this craft with digital edition. Besides a wealth of visual solutions, the movie bets for realistic 3D graphics rendered like gouache or watercolor paintings, or mere silhouettes evenly colored on neutral backgrounds.

As a result, it is important to note that, ironically, the animation of artistic drawing and its multiplicity of graphics techniques would not be possible without technologies of today: many digital animation tools have proven to be a good complement to the traditional tools of drawing and painting, because their development and refinement tend to imitate hand-made aesthetics, emulating the properties of pencil strokes, the watered down, the smearing of pencils, etc. As Alvarez and Lorenzo say, “These digital tools reproduce the visual imprints and even the names of the traditional ones: brush, airbrush, colour palette, canvas, etc. Digital art does
not interrupt hand-made processes and aesthetics, but rather, has given them a new life" [4]. Nevertheless, and as a conclusion, the production process of these short films demonstrates that nothing replaces the artist’s observation and analysis carried out by simply drawing on a sketchbook.

3. Experience and Exoticism: the Documentary Gaze

The travelogue records the animator’s journey both inside and outside. On one hand, the diary records the encounter with otherness, entering a different culture; and on the other hand, it serves as a reflection to hear one’s own voice, confronted with the unknown.

Frequently, trips allow travellers to meet themselves, to mature their ideas, remove prejudices, and also to design new projects. So, Dubois’, Ribeiro’s and Herguera’s movies started from a more personal than objective record of their travels, coming to gain some journalistic tone. Their observations are defined by their personalities and background, as well as how they understand their new context: the one where they seek to know themselves.

Although a certain contradiction can be detected between animation—as a fabricated form—and documentary—a genre that portrays a reality, apparently more dependent on live action film—, Paul Ward [5] argues that there is an influential contact between animation and documentary, which mainly reside in the power of animation to offer an analysis of reality: Animation and documentary are diverse discursive categories rather than simple entities, and it is instructive to examine the points of contact between them. [...] it is something of a myth that animation is a mode that somehow cannot be used by documentary practitioners. Such a way of thinking is based in naïve and simplistic notions of how documentary functions, and in a misguided belief that documentary is somehow “capturing” reality rather than offering an analysis of it.

So, Madagascar, carnet de voyage describes a tribal tradition that can rarely be recorded, photographed, or accessed by a Westerner; Viagem a Cabo Verde transmits Ribeiro’s personal experience of his path through the island country, where he marches to “learn to walk”; and Ámar synthesizes Isabel Herguera’s four-year experience in India, where she regained the pleasure for drawing. But above all, the prevailing idea in the three works is to show things as these persons are—as Anaïs Nin would say—and not merely as a camera would register them, deepening their moods through animation. For this reason, the journey of self-knowledge that they undertake runs under the documentary view of their travel books and the resulting films.

Additionally, the appearance of the authors in these films, adding their voices to the soundtrack, provides the look of an autobiographical confession, consolidating a tone closer to reportage than to fiction. However, these animated self-portraits take different forms: if Dubois is representing himself and others realistically, even using the rotoscoping technique, Ribeiro appears as a black silhouette, geometric, where no individual traits emerge, but rather recalling a walking figure by Giacometti. Meanwhile, Isabel Herguera is transmuted into an alter ego, „Inés“, because in her sketchbooks are mixed the impressions of her own journey with memories of the past, at an imagined India and lived through others.

But, if anything characterizes the approach adopted by these three films, it is the existence of a western look, which tinges with exoticism the final result. However, the narratives remain anthropologically interesting for the viewer. This experience of the indigenous as different particularly concerns Madagascar, carnet de voyage, which tells us about the Famadihana or „return of the dead“, a Malagasy tradition that highlights the cult to ancestors and becomes an important occasion for festivities (Fig. 5). When the traveler arrives at the celebration, an unexpected character welcomes him: a dancer dressed in a suit and hat, but that has no face, like a ghost (Fig. 6). This image anticipates the meaning of Famadihana: when the unearthed relative has already lost the corrupted flesh and is reduced to bones, he becomes an ancestor, a mediating spirit who can be asked for advice, and can receive gifts. His shroud is renewed and he is offered dances and sacrificed cattle, an idea that appears in the film with a high degree of abstraction: under the rhythm of the drums, a mountainous landscape becomes a zebu hump and out of its severed head emerges a beautiful flower, and of this, the skull of the animal itself, establishing a visual rhyme with the ancestor’s unearthed bones.
This cathartic sequence, which reflects the animator’s outburst during the celebration, is followed by the film outcome: with a Malagasy hymn as music background, a dizzying camera moving collects a series of scenes like the farewell to the dead, the forest inhabited by lemurs, and even a country boy wearing a shirt of FC Barcelona, to finish with the traveler picking his backpack before boarding the plane. The stay in Madagascar has been completed, leaving behind a series of unique imprints.

Viagem a Cabo Verde condenses sixty days of march through the former Portuguese colony, where Ribeiro faces inaccessible landscapes and shares experiences with friendly natives. The pilgrim traveling without cell phone, clock or preset plans, but only with what is necessary in the backpack. He examines the mountains, the people, the sea, the music, the people of Cape Verde and, above all, an essential part of himself. There he learns simple but fundamental things, like shaking the boots before putting them on, or not to plan the next day. One of the most striking values of the film lies in the use of metamorphosis to perform changes of scenery and time lapses, taking advantage of the main character’s stylized design —almost like an ideogram—, which provides a large capacity for transformation: for example, when the time comes to leave, his profile becomes the sea waves (Fig. 7). In one of the film’s most notorious twists, the barefoot and cracked heels of a native become the rocky slope of the same mountain they are climbing. Ribeiro talks with the people of Cape Verde and he conveys their reality, using animation as a means to visualize complex situations, such as how many times you have to climb a mountain with a mule loaded with bricks to build a house. Undoubtedly the most symbolic moment of the film is when the traveller exchanges his notebook for the child’s and they draw in the other’s pad.

In Ámár, the sketchbook tells a story of loss and desolation: Inés visits her friend Ámár because she wants to retrieve the memories of a trip they did together in the past, but Ámár is being held in a mental hospital. There, Inés confronts the memory of that trip, of which only are left the drawings and annotations stored in their sketchbooks. “I promised I would return” are the last words of inner dialogue uttered by the protagonist, despite the impossible return to the past. After seeing Ámár, who fails to recognize his friend, Inés endures the bustle of the populous city, reflecting her feeling of confusion, mixed with wild visions of buskers and dances of Hindu deities. At the final scene, we will always have drawing as an element that reconciles us to life: Inés is drawing again on the streets of India, sitting on the cart Ámár gave to her. Although the focus of the film is clearly personal and subjective, without any concern for the documentary or anthropological, the fact is that it is the only one of these three films that was produced mostly in the country it describes, between the National Institute of Design in Ahmedabad, and a small study in Goa, with participation of Indian artists.

The situation of Ámár, as well as in Madagascar, carnet de voyage and Viagem a Cabo Verde, reminds us that memory is fluctuating and the truthfulness of narration is questionable; but there is always a residue of authenticity even in what is reinvented.

4. Anything Goes: the Sketchbook as an Experimental Animation
The work in sketchpads not only remains today as relevant for the animator as it was prior to the digital age, but it is experiencing a striking revalorization that has made it central object of exhibitions and animation compilations. Moreover, the concept of animated diary is revealed as one of the most interesting and versatile options for novice animators, prevailing the idea of
film-exercise, which serves for the renewal of formal and narrative strategies. This creative potential reinforces interdisciplinary links between animation and visual arts, as well as occupies new spaces, such as the art gallery.

During the Mostra de Cinema d’Animació Animac 2010 in Lleida (Catalonia), an exhibition of animators’ sketchbooks was held, where original drawings by artists such as Maureen Selwood, Sekhar Mukherjee, Izibene Oñederra or Laboratorium were brought together. Bastien Dubois also contributed with original art from his film, Madagascar, carnet de voyage, allowing visitors to grasp the concept and realization of it, which has led to a striking mix of drawing, painting and digital animation (Fig. 8). Overall, the exhibition not only allowed to know the production kitchen of a film, but mainly to delve into the occurrences and possibilities that are embodied in the artist’s notebook.

Later, in October 2010, an exhibition by Isabel Herguera took place at the Arteko gallery of San Sebastian (Basque Country): Cuadernos de viaje (Travelogs). The sample rescued notebooks with sketches made during his years in India, which had allowed her to come up with Amár; but the audience also had the opportunity to see an intervention at the gallery, for which the entire gallery became an ephemeral three-dimensional sketchbook: as in the artist’s own scrapbook, the walls of the gallery offered a place to improvise, revise perspectives, incorporate new objects, images, textures, messages, etc., As a result, a collage about India, unique and unrepeatable, was displayed (Fig. 9). Herguera Isabel explained [6]:

The notebook is a game space where there is no supervision, no trial, no you have to show anyone. [...] All this comes with the same attitude: there are a number of drawings, of items that I have, how to configure them to compose a narrative? [...] Every day I dared to bring another element, to add one more thing, without thinking, actually again recovering that attitude with the notebook. [...] It worked because I wanted to put it in at that time.

In this confluence of arts, genres and spaces, the notebook is no longer a merely physical object, but a concept, a way of understanding and record reality. In animation, the drawn diary helps to create a particular atmosphere or tone to engage the viewer in what is told. But as a non-narrative form, the drawn diary takes center stage by itself, providing innovative solutions to overcome conventions in the creative process.

As noted by Marcel Pié Barba [7], experimental animator, “in short, all the techniques are good, and everything can be used to animate”.2 In this way, each film is a different approach to reality, making animation the actual diary of the artist. So, the short film Trying to Draw New York (2006) played frame by frame the process of drawing on a travelogue, capturing snapshots of the city, people, bars, details materialized and dissolved on paper, like a memory of that precise moment (Fig. 10). His following work, La 86.721 mil·lèsima parte del any (Marcel Pié Barba, 2008), is the visual diary of an entire year: Marcel Pié Barba forced himself to create fifteen frames a day for 365 days, totaling 5475 frames—which, at a rate of 12.5 frames per second, stretches for 7 minutes and 18 seconds, making the thousandth 86,721 part of a year. With this project, Marcel found new methods of production and formalization of narrative, in order to develop more appropriate ways to animate, to overcome unforeseen situations and constraints of everyday life, making improvisation and chance two valuable allies of inspiration.
The notebook of the artist, as an element for reflection and creation, is still at the basis of the boldest animated actions, providing formulas that maintain fresh imagination and renovate different arts form.

5 Conclusions
There are no short cuts, really. You just have to sit and draw.
Luis Cook, Drawing for Animation [8]

Artistic drawing remains the main instrument of the animator at the 21st century to think in graphics and images. Despite the accommodation to a limited number of resources and materials, the sketchbook continues to offer the animator a window into a variety of styles, techniques, media, graphics and findings, without neglecting the trials and errors, in a search for creative freedom, as well as growth and reflection for the animator.

Moreover, the travelogue serves the animators to confront their own self with the otherness they find in their travels: the fascination with the new and the unknown that renews the will to live, or what is the same, to draw.

The notebook also reveals a stimulating narrative format to face with a vision, involving the introduction of the animators in their own films, and even dissolving fiction into the real, enabling the creation of an alternative reality. As aesthetic pretext, the aesthetics of the sketchbook or scrapbook can also serve to create a false documentary vision, serving the fictional, establishing new rules on the approach to staging.

Finally, it is important to note the paradox of the artisanal nature of these artisanal films and the dependency on their implementation of new technologies, which are able to transmit better to the final film format all the aspects of hand drawing. As indicated by Sahra Kunz [9],

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.

As shown by Dubois’, Herguera’s and Ribeiro’s films, what ultimately counts is the passion with which they are made: the same enthusiasm of their authors when they started to sketch the events of their experiences, to revive their memory after the return.

References
2. Idem, p. 146.
Abstract
Facial rig mechanics are the underlying structures in a character’s face that allow it to be animated for use in digital media such as films, videogames or advertising. These structures are built and maintained by riggers so that animators can deform a character’s face by triggering user interface controls. The increasing demand for more quality facial animation in the entertainment industry lead digital artists to develop a diversity of rig mechanical approaches over the last 15 to 20 years. But there are special cases which are rarely developed, namely the zipper and sticky lips deformations, which are fundamental effects for realistic character facial animation. This paper presents easy rig mechanical approaches for these effects, which are realized as optimized procedures to provide a consensus to their rig construction process. These approaches were presented to expert digital artists who have evaluated them according to a set of parameters. The results reveal that these approaches ease and improve the rigging of the zipper and sticky lips effects.

Keywords
Characters, Faces, Rigging, Animation, Zipper and Sticky Lips.

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1. Introduction

Digital media such as films, videogames and advertising require appealing 3D character facial animation [1] to capture the audience attention. To achieve the former, digital artists create deformation structures, called facial rig mechanics [2], to deal with the behaviors that the character’s face needs to perform. The mechanics are then triggered by control structures provided to the animators called user interface controls [2]. The facial rig mechanics are setup by an expert digital artist, called the rigger. The job of this artist is hard because the face can “twist and pull into 5000 expressions” [3], thus the rigger needs to accurately simulate many complex behaviors per each facial region.

Amongst the most complex behaviors to simulate in the face are the zipper and sticky lips effects, because they help convey realism to a character’s face. Zipper lips is a voluntary behavior realized as the action in effort of closing the lips together while keeping the jaw open, as in zipping the lips. Sticky lips is the natural tendency that real-world lips have to adhere to each other toward their corners while opening the jaw [4]. It is more complex than zipper lips because it deals with the inner portions of the lips. Sticky lips occurs mostly during speech when the lips are dry or when a person is not speaking for some time and then opens the mouth slowly, causing the upper lip to appear glued to the bottom lip and slowly separating from each other.

This paper presents optimized rig setups for the zipper and sticky lips effects as novel rig design approaches to facilitate their laborious and time-consuming development, as these effects require complex rig setups which are not easy to learn and carry out. In fact, the state of the art in character facial rigging [5, 2] includes little literature on this topic, despite it enhances character realism. The reason for the lack of literature is the inherent complexity that the rig requires to support these effects. Also, rigging is a task that each rigger does differently, which has lead to an enclosure and fragmentation of this field in the last 15 to 20 years, since Pixar released Toy Story [6]. Therefore, the availability of advanced rig setups for zipper and sticky lips have become rare. Few artists show off their work in lips rigging (e.g. Chad Vernon [7]) and even fewer describe their rig setups. A single literary reference by Jason Osipa [4] presents a description of a sticky lips rig, but it does not include zipper lips nor it combines both. In light of the former, the approaches in this paper are realized as an easy reference for riggers and artists in general to reproduce these effects, bringing a consensus into this fragmented field of expertise.

The approaches described in this paper are focused in the human face as a basis for other facial styles, because “any face is always expected to have human features in order to be recognized by an audience as an expressive character” [8]. The implementation of the approaches is done in the popular open-source 3D tool Blender in order to (i) cause a significant impact in their growing community of artists, (ii) leverage the use of Blender in the industry and (iii) the fact that Blender is a qualified platform with an extended workflow. The approaches are also focused in key frame animation [9] because (i) it is the technique that artists most use, as it continues to be popular in Computer Graphics (CG) animation [5], (ii) it is the most accessible and affordable technique since it does not require expensive equipment, (iii) results from other animation techniques need to be adjusted using key frame (e.g. after motion capture sessions), (iv) it allows digital artists to have a more precise manipulation of the animation (frame by frame control) [5] and (v) the fact that key frame is currently at its peak of growth [5], therefore prone to welcoming rig optimization approaches.

2. Certification of the Easy Zipper and Sticky Lips Rig Approaches

The rig approaches presented in this paper are certified via the following conditions: (i) they integrate with existing lips controls (zipper and sticky lips couple with regular lip controls), (ii) they are extensible to different numbers of lip controls (e.g. 8 to 16), (iii) they involve only bones, constraints and drivers, which are universal rigging techniques available in the major 3D tools [2], (iv) they are skeleton-based, therefore they have a higher compatibility with game development since “most game engines do not support blendshapes” [10] (v) they do not require programming skills (more accessible to less experienced artists), (vi) they are open-source (more rapidly accessed by digital artists), (vii) they are cross operating system since Blender is available for Windows, Macintosh and Linux and (viii) they are a relevant contribution.
Easy Character Facial Rig Mechanical Approaches to Animate Zipper and Sticky Lips Effects
Pedro Bastos

for the entertainment industry since there is a limited availability of these approaches in the state of the art of facial rigging and animation. Lastly, the rig approaches presented in this paper are also certified via a user experiment carried out with expert digital artists who evaluated the validity of the approaches according to a number of parameters (see Section 6).

3. Base Rig Mechanical Structure: Neck, Head, Jaw and Lips

To implement the zipper and sticky lips effects, a base rig structure is first built to control the basic behaviors of the lips and jaw. These mechanics allow the animator to open the character’s mouth and manipulate the several small portions of the lips. Part of the setup for this base rig was described earlier by the author [11] using skeletons [12] based on the muscular activity of the human face [13]. This setup is now further detailed in this paper as the base structure for the zipper and sticky lips rigs (described in Sections 4 and 5). Fig. 1 illustrates the setup applied to a realistic human facial model [14]. The bones seen in Fig. 1 are organized in two layers. The first contains the neck (A), head (B), upper and lower jaw (C and D) bones. The neck region is controlled by bone A. Bone B is a hierarchy manager, it does not deform the head because this task is dealt with by bones C and D, which respectively deform the cranium (including upper jaw) and the lower jaw area. In the second layer bones are distributed along the lips to deform them. Bones E and F are replicated in eight lip locations. Bone E connects bone F to the head bone and mimics the rotation of the upper and lower jaw bones via constraints to be averaged by their movements. Bone F is parented to bone E and it deforms the lip geometry closest to it. The constraints of the top half connection bones (above the center line of the lips) are set so their owners are more influenced by the rotation of the upper jaw bone. The constraints applied to the bottom half portion of the connection bones cause their owners to be more influenced by the rotation of the lower jaw bone.

4. The Zipper Lips Rig Mechanical Approach

The zipper lips effect is a voluntary behavior realized as the action in effort of closing the lips together while keeping the jaw open. This means that while the jaw is downwards, the bones deforming the lips return to their original positions to close the mouth. Fig. 2 illustrates the rig mechanical process developed to manage the zipper lips effect.

To generate the zipper lips effect a new extra layer of bones seen in part 2 of Fig. 2 is added to the existing skeletal structure described in point 3. This layer shares the same structure of the layer seen in part 1 of Fig. 2, but its function is to be a reference for the original positions of the bones deforming the lips. The bones in this extra layer are always posed to keep the mouth closed and the user does not have access to these bones, which are hidden from the animator.

To achieve the zipper effect, a constraint is applied to each lip deforming bone (e.g. bone F) to copy the transformations of its corresponding zipper bone (e.g. bone H). To make sure that the zipper effect works independently of the mouth shape, the linkage bones of the zipper bones layer (e.g. bone G) are constrained to copy the rotation of the upper and lower jaw bones with half influence in each. This ensures that the zipper bones are always maintained centered to the upper and lower jaw bones. The process described for bones G and H is then repeated for the remaining bones of the zipper bones layer.

To allow the user to control the amount of the zipper effect, a
driver is applied to the influence of each copy transforms constraint associated to each lip bone. This influence can then be driven using any sort of rig control manipulator (e.g. a gizmo or an interface slider).

5. The Sticky Lips Rig Mechanical Approach
The sticky lips effect is the natural tendency that real-world lips have to adhere to each other toward their corners while opening the jaw [4]. This means that while dropping the jaw, the upper and lower lip initially stick to each other but then slowly release from each other as the jaw is more opened. Fig. 3 illustrates the rig process developed to handle the sticky lips effect.

![Lips Bones](image)

To generate the sticky lips effect a new extra layer of bones seen in parts 2 and 3 of Fig. 3 is added to the existing skeletal structure described in Sections 3 and 4. This new layer involves a more complex bone setup because it deals with the deformation of the inner portions of the lips, which initially need to adhere to each other and then gradually cease to adhere to each other. This is achieved using three different bone groups.

The bones in the first group are located along the center lip line (e.g. bones I and J). Bone J is parented to bone I, which is constrained to copy the rotations of the upper and lower jaw bones with half influence in each. This ensures that this group of bones keeps centered to the upper and lower jaw bones and is always located in-between the top and bottom lips.

The second group of bones is located along the most inner edge of the lips (e.g. bones K and L). These bones are parented to the main deformation bones of the lips (e.g. bone L is parented to bone F) and are responsible for the deformation of the inner portion of the lips. These bones are able to move but the user is not given direct control of them, since they operate automatically and are not required to be visible.

The third group of bones (e.g. bones M and N) share the same position and parenting of the second group, but they do not deform the lips geometry, instead they remain static in that area, being parented to their corresponding lip deformation bones, in order to only move along with the lip deformation bones.

The purpose of the first and last groups is to act as references for the second group. When the upper or lower jaw bones are moved and the mouth opens, bones K and L gradually both stop copying the transformations of bone J and begin copying the transformations of bones M and N, respectively. This allows the upper and lower deformation bones of the inner portions of the lips to break apart from each other in respect to the mouth opening. Part 3 of Fig. 3 shows the sticky lips effect 2/3 executed, with bones K and L getting closer to bones M and N, respectively.

Fig. 4 illustrates the constraints and drivers assigned to bone K as a setup example, which is repeated for the other bones in the second group. The bone nomenclature seen in Fig. 4 coincides with Figs. 1 and 3 to facilitate the rig setup description. In the rig the nomenclature used is more detailed to allow an efficient distinction between the several components that together compose the entire rig setup.

Three constraints assigned to bone K are seen in part 1 of Fig. 4. Parts 2, 3 and 4 of Fig. 4 respectively show the drivers assigned to the influence of each of the constraints in the stack. The influence of a constraint is the intensity of its use, measured 0 to 1. The first constraint, in the top of the stack, copies the transformations of bone J (seen in part 2 of Fig. 3). The influence of this
The first constraint is driven by a control slider ranging from 0 to 1, here called STICKY (part 2 of Fig. 4) and located in the Blender interface. This slider allows the animator to control the amount that the sticky lips effect is applied. The coefficients of the expanded polynomial of this driver are set to 0.000 and 1.000 in order for the control slider range to correspond to the influence range of the constraint.

The second constraint, in the middle of the stack, copies the transformations of bone M (seen in part 3 of Fig. 3). The influence of this constraint is driven by the control slider of the lower jaw, here called LOWER_JAW (seen in part 3 of Fig. 4), ranging from 0 to -1 as the lower jaw moves downwards to open the mouth. The third constraint, in the bottom of the stack, also copies the transformations of bone M but its influence is driven by the control slider of the upper jaw, here called UPPER_JAW (see part 4 of Fig. 4). This slider ranges from 0 to 1 because the upper jaw moves upwards to open the mouth. This setup triggers the sticky lips effect either by the user manipulating the upper or the lower jaw controls.

The coefficients of the expanded polynomials of the second and third drivers are set to -1.250 with -3.000 and -1.250 with 3.000 in order to provide more strength at first and less strength in the end. The reason for the inversion of -3.000 to 3.000 is the fact that the control slider of the lower jaw moves negatively, from 0 to -1, whereas the control slider of the upper jaw moves positively, from 0 to 1. In order to achieve a more realistic sticky lips effect, the values of the coefficients of the drivers managing the constraints of the deformation bones of the inner portions of the lips are fine tuned to allow the deformation bones in the center region of the lips to cease copying bone J faster.

The setup described allows bone K to cease copying bone J and begin copying bone M as the upper or lower jaw are opened. Because Blender evaluates the constraints stack from top to bottom, the effects of the second and third constraints are only visible if the influence of the first constraint is different than zero. Hence, the sticky lips effect is only considered if the animator defines a sticky value, otherwise bone K continues to produce a regular mouth opening by copying the transformations of bone M. This setup is then repeated for each bone responsible for the deformation of the inner portion of the lips.

6. User Evaluation: A Qualitative Experiment
A qualitative experiment to evaluate the zipper and sticky lips rig approaches was conducted online with five expert users in character animation who are also professors of 3D in higher education institutions in Portugal and Brazil. The users were asked to score the rig approaches in a number of parameters according to their satisfaction and given their professional and lecturing experience. The users are Gustavo Castro Rosa of the Veiga de Almeida University of Rio de Janeiro (UVA/RJ), Nelson Alexandre Gonçalves of the Superior School of Education of Viseu (ESEV/IPV), Nuno Miguel Estanqueiro of the Superior School of Social Communication of Lisbon (ESCS/IPL), Pedro Mota Teixeira of the Superior School of Technology of Barcelos (EST/IPCA) and Ricardo Sá Carneiro Megre of the Arts School of the Catholic University of Porto (EA/UCP). The evaluation was carried out individually according to the two stages described in Sections 6.1 and 6.2.

6.1. Stage 1: Description and User Hands-On
In the first stage the users were presented with a video showing a series of facial rig control approaches collected from the state of the art in character facial rigging and animation. The purpose of this video was to introduce the topic and help generate a compelling environment for the experiment. A description of the Osipa approach [4] was provided following as a means of comparison for a final follow up description of the approaches developed by the author in Blender, which involved describing to the users Sections 3, 4 and 5 presented in this paper. The users were then invited to use the facial rig directly in Blender to test its features and the rig construction workflow (user hands-on). This stage was carried out in a period of 60 minutes, of which 40 minutes were used for the author to describe the rig and 20 minutes for user hands-on.

6.2. Stage 2: Evaluation Questionnaire via Interview
In the second stage an evaluation questionnaire was conducted via an interview with no limit of time. Each user was asked to score the zipper and sticky lips rig setup process based on (i) their experience as professionals and professors, (ii) on the description
provided by the author and (iii) on the user hands-on period they have carried out. Users were told to feel free to provide any comments during their scorings, which were given in a 0-10 scale according to a set of parameters presented following in Section 6.3.

6.3 Evaluation Parameters and Experiment Results

The parameters devised to conduct the user evaluation rely on usability engineering criteria by Nielsen [15], usability metrics by Dix et al. [16] and on inherent characteristics of the rigging process. The parameters are the following: (i) easy construction and maintenance (if the steps required for the rig setup process are easy to carry out, to keep track of and to fix or change if necessary), (ii) integrability of features (if the features of the rig are well integrated with each other and are suitable for being used with rigs relative to other facial regions), (iii) overall complexity of learning (if the rig setup process is easy to learn [15]), (iv) easy to reproduce without errors (if the rig setup process is easy to remember and repeat successfully even after a period of not using it [13]), (v) easy to extend to other facial styles (the potential of the rig being applicable to other character faces like cartoons), (vi) balance work/efficiency (if the amount of work to build the rig justifies the efficiency of the visual deformation results), (vii) compatibility offline/real-time (if the rig can be used for characters in both films and videogames, given that most game engines cope better with bone-driven deformation), (viii) go cross-platform (if the rig has the potential to be recreated in other 3D tools considering that it is based on rigging techniques available in the major 3D tools), (ix) applicability to lecturing (if the rig setup process has potential to be lectured as an advanced workshop topic in a classroom environment to experienced students in character animation [16]) and (x) applicability to the industry (if the rig setup process has potential to be used as a rigging approach in the production pipelines of studios and companies working in the entertainment industry [16]). The scores given by each user are presented in the following table.

The individual and averaged scores given by the users for the rig approaches reveal the importance of these approaches for character facial rigging and animation. Only 7 in 50 slots (14%) have scores lower than 8. These scores are justified following.

<table>
<thead>
<tr>
<th>Evaluation parameters</th>
<th>Expert Users Scores</th>
<th>Average per parameter</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>L1</td>
<td>U2</td>
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<tr>
<td>(i) easy construction and maintenance</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>(ii) integrability of features</td>
<td>9</td>
<td>10</td>
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<tr>
<td>(iii) overall complexity of learning</td>
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<td>10</td>
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<tr>
<td>(iv) easy to reproduce without errors</td>
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<td>(v) easy to extend to other facial styles</td>
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<td>(vi) balance work/efficiency</td>
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<td>(vii) compatibility offline/real-time</td>
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<td>(ix) applicability to lecturing</td>
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<tr>
<td>(x) applicability to the industry</td>
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</table>

Users 1 and 5 scored 7 in the parameter (i) easy construction and maintenance, based on the fact that the maintenance of a facial rig is a hard task with which expert digital artists are more capable to deal with. This score is close to the scores of the other users, who have justified their option as a safety conduct rather than the cause of any sort of limitation in the facial rig approaches.

User 2 scored 7 to the parameter (v) easy to extend to other facial styles, based on the fact that a larger number of lip controls might be required to allow an accurate transition from the presented realistic facial model subject to other facial anatomies. This score is described as a safety conduct revealing that a relatively accessible adaptation of the rig approaches could be necessary, given that the lips can adopt different shapes in stylized characters (e.g. cartoon lips).

Users 1 and 5 scored 5 in the parameter (vi) balance work/efficiency, based on the fact that these effects are used in specific situations and that a faster solution (e.g. an automatic facial motion capture system) is sometimes a strategy that digital artists might prefer to reduce the amount of rigging work. Motion capture solutions to track the lips remains a process prone to errors [17]. Also, mocap equipment (i) is usually not cost free, unlike the approaches in this paper which rely in the artist and in Blender, (ii) the end results produced by motion captured lips can require extra fine tuning by the animators and (iii) an optimized underlying facial rig mechanical structure is required to guarantee a custom control of the lips and also provide extra deformation which cannot be motion captured (e.g. cartoon lips) [18].
User 5 scored 7 in the parameter (ix) applicability to lecturing, based on the fact that there are a number of topics which can be lectured in advanced rigging. But if implemented as a specific workshop on facial rigging, then the chance of lecturing these topics using the approaches described would definitely increase.

User 1 scored 7 in the parameter (x) applicability to the industry, based on the fact that the limited production time in a company can cause these approaches to be considered only in case they are used more than once. Still, it must also be considered that a faster solution can tend to provide acceptable rather than desirable end visual results.

7. Conclusions and Discussion

The facial rig mechanical approaches presented in this paper are considered easy because they are certified according to the conditions presented in Section 2 and are validated according to the positive scores given in Section 6.3 by expert professional users who are also higher education professors. The approaches ease the job of riggers because they suggest logical rig procedures that work together to improve the character rigging and animation of two advanced facial visual effects that are required to be both realistic and appealing. The approaches are accessible and efficiently usable by most digital artists because (i) they are not programmable based, (ii) are complete since they include various features (upper and lower jaw control, individual lip control and zipper and sticky lips effects) and (iii) are developed in the open-source 3D tool Blender.

Despite there is a clear focus in Blender, the approaches are highly prone to be implemented in other 3D tools, since they are based in techniques available in the major 3D production packages. The number of five users who tested the approaches is not realized as a limitation but rather as a significant qualitative study because (i) very few users are expert professionals and also high level education professors of animation, (ii) these users are experts in different major 3D tools (including 3D Studio Max, Blender and Maya) and (iii) these users have distinct influences given their different locations, which encompass the current major research and production sites in this field in Portugal (Barcelos, Porto, Viseu and Lisboa) and a foreign location in Brazil (Rio de Janeiro).

8. Acknowledgments

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References

Abstract

Traditionally, teaching drawing has been mainly centered on an artistic (stylistic) approach. Drawing teachers base their work on methods similar to those used in the fine arts. Notions such as composition, style and expressiveness are primary in the transmission of knowledge to the class. Because of this approach, when learning drawing students sometimes find themselves not quite grasping what they are being taught. This can be doubly true when students have not been trained in the techniques and materials of drawing, or if the main goal of drawing in their education is to provide a tool for other types of artistic creations.

I have conducted research within the classroom for the past years in the context of research for my doctoral thesis, collecting and organizing drawings. These studies took place in an environment in which drawing is meant to serve as a functional tool or language for new media artists and technicians. Most students have little or no previous knowledge of drawing, and often experience severe difficulties when confronted with even the simplest of tasks.

A questionnaire was used to provide information, such as correlations between age and drawing skills, and common mistakes in the representation of simple objects. This data lies at the basis of the attempt to catalogue and analyze main categories of errors in these students’ drawings; and to provide new educational tools for the drawing teacher.

Definition of the main categories of errors in “functional drawing”

Keywords
Drawing, Drawing errors, inexperienced students, functional drawing, perspective

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1. Definition of drawing in this context

Recently, authors such as Betty Edwards [1] or John Willats [2] have advocated a new approach to teaching drawing. This approach relies mainly on the creation of a bridge between the evaluation of artistic abilities and of scientific/objective knowledge. The notion of “artistic genius” is rejected in favor of a more encompassing perceptual and observational experience. An intercrossing between the arts and the perceptual sciences encourages a student not only to blindly copy a motif, but also to understand the perceptual mechanisms that underlie his observation and representation of it.

In this context, one must proceed to define drawing in a more specific, and perhaps less “artistic” way. If one extends the definition of a “good” drawing from that of a drawing with aesthetic qualities to a drawing with “functional” value, one can dissect the characteristics of this drawing in a much clearer way. For the purpose of this paper, drawing is characterized as a graphic language, whose message needs to be clearly transmitted from its creator to the person who interprets it. The advantage of drawing when compared to spoken or written languages is that the observer usually does not have to learn an alphabet or grammar, as his/her understanding of a drawing is immediate and usually unequivocal (if the drawing is executed correctly). This allows drawings to convey complex ideas and representations that become accessible to a wide audience, regardless of their linguistic or cultural background. The stricter definition of this type of drawing should include the following parameters [3]:

- Drawing seen not as an artistic activity, but as a means to convey, reflect upon, or create the necessary foundation for other activities, be they of artistic nature or not;
- Drawing that transcends personal artistic expression, executed in a way in which personal mannerisms and traits are largely absent (the opposite approach an artist would take);
- Drawing as a tool used to represent a shape or scene in a correct and rigorous way, keeping a strong similarity between the observed object or scene and its representation;
- Drawing as a language, in which the amount of information present in a drawing should be adequate to the function it fulfills; Drawing that is easily recognized and interpreted, meaning that the mode of representation is clear utilizing the marks best suited in drawing;

Finally, and in order to simplify the scope of this analysis:
Line drawing with no color, or shading.
These definitions permit to narrow the study margin, and the identification of some basic characteristics a drawing should possess in order to be considered a functional tool. This becomes a quantitative analysis, rather than a qualitative one.

2. Study group

The study that was conducted took place in an environment where most students have little or no previous knowledge of drawing, and in the beginning of their degree experience severe difficulties when confronted with even the simplest of tasks. They are first year students of the undergraduate course in Sound and Image, at the Portuguese Catholic University. For them, the discipline of drawing is meant to serve as a provider of a functional language or tool, not for fine artists, but for new media artists and technicians. The Sound and Image course does not have the same entry requirements as a typical fine arts course, as its focus is divided between an artistic and technological approach. This implies that many students applying may never have drawn, or possess little knowledge of drawing techniques.

Altogether, 43 students participated in this study (of a larger group of 65), all of them enrolled in the first year.

3. Methodology

The methodology used to determine the main types of errors that both inexperienced and more experienced students made, took the form of a questionnaire [4], designed specifically to determine diverse aspects of background information and drawing skills. These errors were not yet organized into categories, but there were some suspicions of which they could be, that the questionnaires were meant to clarify (as many errors confirmed through the use of the questionnaire had been observed in class over the years). This questionnaire had been used a similar format in previous years (usually at the beginning of the first year) to determine the general skill level of the students, and as such it was modified several times over the years. For the purpose of this study, some
new questions and exercises were added, based on previous answers to older questionnaires.

The final questionnaire consisted of two main parts, a written and a drawn one. In the written part, students answered several questions about their level of familiarity with drawing, their educational background, the frequency with which they draw, amongst others.

The drawn part consisted of three types of drawing exercises: from memory, in which students were asked to draw a seated person from a lateral, frontal and top view; copy from photographs, in which the students were asked to draw two slightly different views of a box and one view of a cylinder; and a copy drawing from a complex photograph of a human face, and of a cartoon character.

These questionnaires were handed out on the first day of class of the first year, before students had attended any drawing classes, and again on the last day of the second semester, at the end of the year, after they had attended drawing classes for two semesters. They were to be filled out in pencil, as the drawings were meant to be line drawings only, with as little shading as possible.

4. Results

As a result of these questionnaires, (86 in total, 43 in each semester), it was possible to collate a significant number of errors that repeated themselves in each type of question. [5] The written part of the questionnaire allowed to ascertain that the study group was composed on average of slightly older students than usually apply to the first year of university, that only a quarter of them came from an artistic study area in secondary school, that most (even those coming from artistic areas) of them didn’t draw outside of classes, and that most of them didn’t understand or apply the rules of perspective [6].

The first part of the drawn part of the questionnaire asked students to draw a seated figure from memory from a lateral, front and top view, and in Fig. 2 one can observe a typical answer to this question. [7] It was found that in the lateral view, students mainly opted to represent the seated figure in a profile view, with little or no depth indications (sometimes one leg of the chair the figure was seated on was drawn as being slightly smaller than the one in the foreground). In the frontal view, many drawings showed a wholly frontal position, which led to increased difficulties in the representation of the legs, which should indicate some depth. In Fig. 2, the student opted for a less characteristic solution, twisting both the legs and the chair sideways, in order to solve the perspective problem. The top view also yielded interesting results, as comparatively to the drawing space used in the other views, the students mostly opted for a smaller, more distant looking drawing. This may refer to environmental stereotypes [8], in which a
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5. Types of errors

Based on the results obtained from the questionnaires it became clear that drawing errors stemmed from two larger categories of factors: Internal factors, which relate to the understanding and representation of the object, or from the knowledge of the principles and rules of drawing and from External factors, relating to lack of familiarity with drawing materials and the correct way to use them. [13] These factors also relate to what were termed Representational Skills and Drawing Skills. The first relate to the internal thought processes that have to take place during drawing, such as the ability to compare the drawing to the drawn object, or the ability to observe an object with its formal characteristics and proportions in mind. The second relate to the manual skills needed to execute a drawing, both in handling drawing materials and the gestures needed to draw. [14] These observations led to the division of drawing errors into two sizable categories: Internal Representation Errors and Manual or Material Errors.

Internal Representation Errors stem from the incomprehension of the observed object, of the viewpoint from which it is being observed, and of the perspective rules needed to draw it, and they can only be corrected through intensive drawing practice, and by learning and understanding the accepted rules of drawing, such as perspective. [15] Manual or Material Errors stem mainly from a lack of familiarity with drawing materials, and can occur in students with more experience if they are confronted with a drawing material they haven’t used before. [16] These errors are usually easier to correct than internal representation errors.

5.1. Internal representation errors

Internal representation errors can be further subdivided into the following categories: Point of View or Rotation errors, Incomprehension errors, Stereotypes and Relative Placement errors.

Point of View or Rotation errors [17] can be characterized as errors in which one or more of the faces of an object are drawn with an excessive rotation towards the observer. This has the effect of making some of the objects features more visible than they actually are from the observer’s viewpoint. This type of error is often more visible when the objects in the drawing are more geometric, but they can occur with any type of object. Also, this category of
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5.1 Inversion or Perspective errors

Error includes the errors identified as Inverted Perspective errors and Limited Perspective. These include all situations in which an object is represented in a way in which its more distant elements appear to be larger than those closer to the observer.

In the questionnaire, the angles of the geometric objects to be copied from photographs were measured, and compared to those represented in the drawings of the students. In the rectangular objects, most rotation errors occurred in the top part of the object, with an accentuated tendency to show a larger visibility than was there. It was found that from the first to the second questionnaire these errors tended to improve, as students attended drawing classes during a whole year. Incomprehension errors usually relate to more complex objects, such as the human face present in the questionnaire. In the case of these errors, a complex object is usually completed in an “imaginary” way, as those drawing it possess neither the drawing experience, nor sufficient knowledge of the object in order to draw it correctly.

Stereotypes consist of modes of representation often acquired during childhood, which persist in adulthood if drawing is not a regularly practiced activity. They often manifest in drawings unconsciously, and are especially persistent when drawing familiar objects. Usually, when drawing stereotypes, most shapes are drawn as separate elements, rather than elements part of a whole (for example, a face will consist of eyes, nose, mouth, eyebrows, etc. placed as individual objects rather than parts of the whole).

Relative Placement errors happen when the transference of the observed object or scene to the sheet of paper causes problems. They are especially visible when drawing a more complex scene, in which multiple objects have to be represented. Somewhat similarly to what happens with stereotypes, a complex scene is perceived as a group of distinct objects, rather than objects with concrete scale and placement relations between them.

5.2 Manual or Material errors

Manual or Material errors consist of Intermittent Line errors, Scale errors and Placement errors.

Intermittent Line errors stem from a lack of knowledge of how the drawing implement (pen, pencil, brush etc.) is to be used in the context of drawing. These types of errors may have their origin in the difference between writing and drawing. Whereas in writing it is beneficial to create a more continuous line, in writing the pen or pencil usually is used in a much different way, constantly lifting and pausing as each letter is created.

Scale errors occur when, due to lack of experience, the limits of the sheet of paper are not understood or used correctly to represent a certain object or scene. The drawing is seen as being almost independent from the paper, and can be of inappropriate scale - too large or too small. This error is very well represented when larger objects are to be drawn, and inexperienced students struggle with scale issues.

Placement errors are an extension of Scale errors, as
drawings will be placed at a random location on the sheet of paper. Even during copy works, these errors tend to appear, although they are graver in life drawing.

6. Conclusion
Although in this study drawing is classified as a tool, rather than an artistic form of expression, one believes that a more quantitative approach in the analysis of this discipline may benefit both those trying to teach and those trying to learn this vital instrument of creation. The knowledge and classification of these errors can be an extremely valuable resource for the teacher in any classroom, as they allow for a targeted approach to the problems inexperienced students face when learning how to draw. It is believed that for a far too long time more technical questions in the learning of drawing have been ignored, in favor of an artistic and expressive approach. One can argue that both approaches are equally valid, and, if anything, should be used in a complementary way.

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Stop motion: from plastic to plasmatic cinema

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Abstract

When talking about Animation as a graphic or a plastic cinema it is underlying a certain idea of what the medium is and how it is different from live-action films. On the one hand it is about creating the movement and on the other hand it deals with an infinite kind of techniques related to fine arts and graphic arts to produce the images needed, in a word: the forms. Among these techniques, the Stop motion as a privileged medium based on frame-by-frame shows that reality and its matter can be animated too and not only the abstract space of the representation being it a drawing or a 3D modeling. With Stop motion, even if the technique can be “reduced” to animating puppets and a set or clay for example, we will argue that its specificity lies more specifically in the possibility of changing the propriety of a matter and its limit of elasticity to the point of breaking the consistency of things, transmuting the substance into another. In this state of thing, the link between creating form and creating movement can’t even be drawn anymore because the form and movement are one same consequence of the substance behavior the artist is giving to matter, whereas in traditional animation you create a form more or less stable and you make it move. This art, now interrogating the global notion of arts of movement, cease to be a graphic or plastic cinema and becomes what we would call a plasmatic cinema. The form never really gets a permanent consistency and integrity to be able to be seen as a moving object or subject but as pure protoplasm constantly transforming and redefining a matter. Indeed, the natural limit of elasticity of matter can be modified with Stop motion to the point anything can become subject to plasticity – not

Keywords

Animation; Plastic/Graphic cinema; Plasmatic; Protoplasm; Movement forms; Elasticity; Consistency; Virtuality; Transmuting; Substance.

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only a gum in cinema or the body of a drawn character in animation for example. In these kinds of cinema the matter is pure virtuality when in Stop motion it is real matter becoming virtual through the plasmatic process: movement is just a change of the form and form just a change of character through movement. The whole matter of the world is becoming a material to be liquefied and redefined where movement and forms are sharing the same state of the art. If a plasma is in chemical research the fourth state of matter (with solid, liquid and gas) we would say by analogy that it also helps defining another kind of animated picture dealing with a perpetual fusion (or fusing) of forms. In that sense, Stop motion is exemplifying what is plasticity of motion, in the overall arts of motion.

Different ideas of movement, graphism and plasticity in animation.

To acknowledge a first fact, it is, generally speaking, as if there was a passive or silent agreement conceiving animation as a cinema turned towards graphic and plastic solutions, as if it was, according to Patrick Barrès¹, “disclosing the missing link between cinema and fine arts or plastic arts” using the art techniques cinematographically by transposing or applying “painting and sculpture questionings” to animation. Animation, as a pictorial art seen “through and with the cinematographic apparatus” is becoming a means to actually produce “living painting”, permitting that way to see the image becoming (on its way to be made) in a continuous “poïetic scenario”, the picture being solely the trace of the gesture or its image coming into being. That way, animation would be on the one hand a cinema continuing the desire to create new “graphic experiences” thanks to motion but not a cinema delivering new experiences of motion that would be, for example, beyond modeling or in other words beyond any plastician competence. Barrès evokes briefly, through Fernand Léger’s work and Elie Faure’s commentary, the construction of movement as a plastic thing but never say in what this construction – except that it is sharing some modality of an enhanced notion of plastic arts (research on rhythms, contrasts etc.) – would be plastic itself in the end.

That’s maybe why, Dominique Willoughby², on its part, trace a line and distinguish “techniques of graphic synthesis” and “those using objects, dolls and articulated puppets but also modeling and animated sculptures or even animated actors”, these ones referring in his opinion to photographic cinema. He considers Stop motion as a neighbor of graphic cinema (in another word: animation) “which has a distinct aesthetic and properties and which put emphasis on the movement, transformations and modeling of objects staged and shot frame by frame, giving birth to a specific and diversified art”.

While graphic cinema is inscribing matters and based on “versatile games of the inscriptions retraced on a surface” as Willoughby says, Stop motion, on its side, has the whole image itself, movement and versatile matter through virtualization as bases. We’ll see that the movement is becoming the subject through the

new magmatic substance of matter, the construction of movement via a set of fixed views producing a “plastic waving” of time as much as a “plastic weaving” of photographed matter.

It appears quickly that, in this paper, we will be talking about a specific and experimental state of Stop motion, when it is not yet compromised by a global comprehension of movement that has been found in the animated drawing practice and which is now generalized to mostly every kind of animated picture. However, this specific animation modality can be found in many (not that much abstract) Stop motion films like in Jan Švankmajer or Quay brothers works amongst others because the medium is not reduced to the only modality of animating puppets realistically for example.

Renewing the theory of forms.

Departing from thinking the Stop motion as a semi-animation/semi-cinema thing, a second degree of analysis opened up quickly when switching to my thesis work and so the question was sliding into another while I was determining what is the Stop motion’s specificity. Indeed, soon we have been involved in understanding widely the creation in the diverse arts of motion for our research led us progressively developing and thinking more globally the concept of motion itself. On that train of thought we focused on the specific states of motion that Stop motion is implying amongst others, distinguishing itself from other arts dedicated to motion (or at least working on its construction) like traditional animation, cinema or even dance. The fact is that the very special movement Stop motion is presenting is precisely giving its plasticity to the image and so, may help defining the plasticity of movement.

That’s how, upon the problem of determining an art of movement, the question of the plasticity of traditional and Stop motion animation emerged. If the plastic research of the first one is a graphic synthesis (of motion), the other one is seeing the emergence of a totally new kind of sensitiveness departing from the strict notion of plasticity in arts to embrace a – not so brand – new notion: the plasmaticity. This one being not a kind of plasticity but another aesthetic concept reconnecting with some of the roots of what plasticity’s idea has been made-off.

So, before getting at the heart of the plasmaticity concept (that will led us thinking movement as an art in itself) we will have to introduce the divergence between ideas of plastic or graphic arts compared to the plasticity notion.

If we think the form or in other word the “plasticity” as a thought and dynamic construction of a unity, based on the dynamic of thoughts, and if we consider the method or the proceeding and technic of representation used to materialize it as the “graphic” part, you are separating the what and the how. But in the plasmaticity concept the form is containing its own “graphic” appreciation; its way of becoming is also its way of being so that the shape is rendering and is making possible the appreciation of the dynamic of thought as an active power in the image and not as an origin.

The notions of graphic and plastic arts, by distinguishing the process of how it is made (by which graphic means and solution) and the form in itself (the shape or silhouette of an object, its outline) evicted the idea of the shape’s moldable quality, its versatility so as the principle of its formation, the train of thought which led to it. On the contrary, with plasmaticity, the form and its treatment is one same thing: indeed, that treatment is not reducible to a graphic construction based only on the use of technical means like the line, points and surfaces but is more based on the form in its shaping, in its very act of formation or development. Again, the form is not a form conceptualized once for all then made appealing to senses.

Transmuting matter through virtuality.

At this point, we have to show how specific the plasticity of Stop motion can be compared to the plasticity generally understood in animation. Indeed, you would still wonder why wouldn’t it be possible to also create plasmatic cinema with traditional animation? After all, some of them are also still looking for kinds of movements underlying matter’s malleability and proper to motion picture based on the frame by frame technique. We will answer to this that its matter, even if it is also virtual, is not dealing with the specific state we described. Indeed, on the one hand there is no matter used as it is but as a way to create space and forms of representations. It is a fact that, to the exception of painting on film or moving stripes of paper, the drawing is, strictly speaking,
also a recording of the reality. However, this recording is diverted and used in an immersive way. Indeed, in the animated drawing, the camera is facing the picture and embracing the flatness of the drawing medium, being it the paper or the celluloid. So, we have to consider the space of the drawing as an absolute dimension, abstract, autonomous and full of itself where materiality and figurative objects are rendered through a graphic solution.

On the other hand, creating forms or pictures is not linked to creating the movement at once, as one same work you can’t distinguish the two things conceptualized separately. In fact, it is not about making a form being able to move, it is not about creating a mobile, like a puppet or an entity that is "kind of" moving on its own and that "seems" to have its own dynamic and will of moving. With plasmaticity, it is more about finding, in the matter, as pure matter, an expression of it in movement, so that motion is ensuing from it. It is not the actual matter that is moved through the Stop motion process, it’s the animation of the successive tormented states of a matter (we mean here a matter soon detached from its physical and environmental propriety - like gravity - and more precisely its limit of elasticity) that gives its appeal and which make appear plasticity. It is not a graphic image moving or, the reverse, a movement somehow "wearing" a graphical suit. In fact, traditional animation conception is precisely the contrary of Stop motion's; indeed it is looking for giving physical rules to its handcrafted or computerized subjects and spaces of representation in the global idea of making it "live of its own". If the graphic and plastic universe created is trying to reach a point of total coherence, no doubt the movement has to take part of it fully, the movement being only one of the "living character" attribute. With plasmatic cinema it is like if the matter only got the movement to express itself (through forming), it is not anymore the forms expressing through movement. This big reverse is at the very center of this art.

Also, we picked up Stop motion amongst animation kinds for it is dealing directly with photography, fixing a view and creating a fixed image, that, apart through computer interventions, you cannot modify easily between two frames. You shoot only static elements and can adjust and alter objects before the shoot but once taken the picture is a whole and done. Drawings are way more handleable and versatile, they are the matter, the form and the generation you want, free to grow and the reverse when with real matter and objects you have to take in consideration their propriety and divert these propriety in order not only to create new forms or articulate a figure but also to possibly give a new behavior to matter. This is precisely this new behavior that is delivering new kinds of movement and which allows any matter to become plasmatic, in other words, a perfectly plastic matter allowing the maximum of versatility - which is not possible with any matter (in its realness). Like in the polymeric chemistry where molecules are manipulated in order to make a pure plastic matter, the Stop motion gives the technique of frame by frame motion a new dimension.

Somehow Stop motion is in-between animated drawing (totally new space, new figure) and cinema (real space, real matter); it is making animation with the real, reanimating the reality. It is like a game with the image of reality that is just borrowed to be redefined.

**About some conceptions of Stop motion.**

Being a theory work on cinema aesthetic we will, however, open here a small bracket to have more insight via some Stop motion works and critics. If there is numerous films showing mixes or transformations of matters it is very often in a fictional way, the animator using for example cotton or fibers of this kind to create a false cobweb. But sometimes the matter is itself fictional on a higher degree and through another modality of representation being used to define a matter that is far from having the equivalent quality of what is supposed to be. In this case we are jumping from one paradigm to another, from a world totally made of clay or plasticine (incarnated by Aardman productions) to a world where a matter finds a way to express another through movement. In Aardman’s *The Pirates!* (2012), water (which appears many times because of the ocean theme), being a very difficult thing to express through frame by frame animated plasticine is in fact a computer generated element when in *A Town Called Panic* - *The Movie* (2010) water is expressed through a lot of imaginative ways, being just a blue filter, a space painted in blue when characters are into deep waters. When it is a surface or a jet it is glow-
ing glue, fibers or plasticine. It mainly is the way these matters are animated and transforming alternately into another, their tumult and visual fluidity effect, that transforms them into another matter, free from its original limit of elasticity. An extreme example of matter’s change of “behavior” is to be found in Švankmajer’s The Flat (1968) with the quick decomposition of the bed or the holes in the wall in JS Bach - Fantasy in G Minor (1969) but in the first leg of Dimensions of Dialogue (1982) where all matters becomes one same flesh, vomiting itself to better digest it again, without end; a paradigm leading here to the other one, in circle.

For Laurence Schifano, “in Wallace & Gromit, humans, animals and machines are kneaded in one same paste; there is a magical fraternity between beings and things, a universal analogy for there is only one substance left, one unique matter as a childish dream taking form through the infantile absolutely powerful desire of eating a world that became “as much a paste to play than a paste to eat”. The finger prints and marks that can be found on it, accidentally there after the child’s play or the movie’s director are the evidences of the creator and the child’s seizure on its world, of its presence in art. We are witnessing “tormented transubstantiations, confusing the boundaries between human, mineral and animal, in one same metamorphosing flesh”, Stop motion having an alchemic power for it allows to animate an inert matter, transmuting it into something totally different”.

For María Lorenzo Hernández, if it’s “the low degree of iconicity of images, that reinforces the idea of animation as an invented, arbitrary universe”, generating animation’s “own codes of representation”, then, “the cartoon is especially suitable for these astounding twists, because its degree of iconicity is lower than other animation processes restrained by their innate or virtual volume – as in Stop motion or 3D Computer Animation”. To us, the movement in Stop motion is modifying the iconicity of the different matters and their qualities and this is precisely this contrast between the photographic realness (of spaces, bodies, matters in their shape or context) and their new “elastic” or “plasmatic” propriety that is producing a renewed world where imagination is not fleeing the too harsh reality with its strict laws but facing it by restructuring and reconfiguring it without any limit. Making an “autonomous universe” does not require absolutely things to be “unfastened from factual existence” when plasticity of motion is involved, movement being the solely phenomenon rendering the image plastic whereas in animated drawings, the drawings are already plastic (or graphic) even before being animated. The idea is the same if we think about how things, body and matter “dances” in Stop motion; Laura Ivins-Hulley notes: “in the animated film, the ontology of performance is appearance. After all, performance is rendered frame by frame, giving it no profilmic existence”.

Writing about this subject in the same journal, Cathryn Vasseleu writes: “Švankmajer summons forth the immanent vitality that resides in inert material.” Following that point, her developments connects very well with our idea’s of an expression of mind’s elasticity and versatility in concrete matter: “The tactile imagination is capable of retaining and transforming tactile memories into analogies that are charged with psychical intensity. For Švankmajer, seemingly inert objects have the mutability to arouse this tactile sensibility (...)”.

On that topic and filmmaker, Meg Rickards, adds for its part, beginning with considerations on live action cinema: “(...) because the ‘mental content’ in film – that is the material with which the imagination works – is also already an image, the viewer does not need to engage with the creative level of imagining that takes place when reading, whereby mental images are evoked by linguistic signifiers. I do not contest the difficulty of rendering mental states in cinematic terms, but I do believe that cinema, and animation in particular, has at its disposal its own armoury of techniques for conveying interiority, and that these are able to engage the imagination thoroughly, leaving it to forge connections – to ‘do work’, as it were. (...) One filmmaker and animator who has consistently screened the ‘inner’ experience is Jan Švankmajer, who for the best part of fifty years has been making films that both combine different media and traverse various states of mind (...) Švankmajer treats live action and animation as filmic forms that carry equivalent value – if not equivalent meanings. Wells (1999: 214) maintains further that the process in animation of ‘giving life’ to the inanimate should reveal something about the figure or object that could not effectively be achieved via live action. He suggests that, if it is live action’s job to present reality, then anima-
Stop motion: from plastic to plasmatic cinema

Cyril Lepot

Toward a plasmatic cinema...

It happens that Stop motion is neither a graphic nor a plastic cinema; but which analysis would describe this specific cinema keeping both the idea that it is of course still a medium belonging to the art forms of the moving picture and its relation to others art creation? Indeed, it is one thing to consider it as belonging to the photographic cinema like the live action film is, but it is another thing to define it. The process of defining it a step further than saying it is showing us the invisible and that it is underlying a reality that cannot be filmed led us to extend our analysis to a wider problem: by confronting the notions of movement in visual art practices we aimed to define weather or not there is an art strictly dedicated to movement. Here, we mean as an art in itself, alike the domain founded by the graphic or plastic arts practices that extended itself to animation as seen upper here.

This interrogation is aiming to find out how and when the creation of forms is to be inseparable from the creation of movement (because movement has always been a problematic point in art from day one, an image being always fixed by definition). We’ll develop here how this working direction led us to get back to one of the original idea of plasticity: plasmaticity. Indeed, that path drove us to dig deeper on the Stop motion subject; if our first memoir was considering the relationship between Stop motion and the arts of the moving picture, then our thesis work was more based on the relationship between Stop motion’s form of movement and movement in art, through the prism of a global reflection.

That way we made the picture bigger on what achievement Stop motion is regarding how it permits me to rethink plasticity by reconnecting with this parallel notion of it – plasmaticity – particularly discussed in “The archeology of the notion of plasticity”.

First, plasticity (plastikos) was denoting a versatile propriety of creation? Indeed, it is one thing to consider it as belonging to the photographic cinema like the live action film is, but it is another thing to define it. The process of defining it a step further than saying it is showing us the invisible and that it is underlying a reality that cannot be filmed led us to extend our analysis to a wider problem: by confronting the notions of movement in visual art practices we aimed to define weather or not there is an art strictly dedicated to movement. Here, we mean as an art in itself, alike the domain founded by the graphic or plastic arts practices that extended itself to animation as seen upper here.

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That way we made the picture bigger on what achievement Stop motion is regarding how it permits me to rethink plasticity by reconnecting with this parallel notion of it – plasmaticity – particularly discussed in “The archeology of the notion of plasticity”, a previous analysis that Dominique Chateau is resuming in a chapter of his more recent “Philosophy of a modern art: cinema”. First, plasticity (plastikos) was denoting a versatile propriety of matter becoming soon a plastic art as “the modeling of a form” or “the form as well shaped thing”. Then the notion extended toward the focus on the process of formation more than the matter or form itself, connecting with the Aristotle’s idea of “poetic” relying on the following fact: “art products are the things which forms already exist in mind” structuring the form dynamically from the inside. Also, from the Platonic side, it is said that it is easier to model ideas in mind than in the matter, even being wax, the thought being absolutely flexible as it can change infinitely without being threaten in its integrity at all. Another concept of plasticity, by Chateau’s idea is departing from the greek “plasma” which means as much the shape of a form than the thing arranged to even better deceive by simulating, fainting, in all: making a fiction. Soon that vocabulary gave birth in modern times to the concept of plasmaticity, growing from the idea of “protoplasm” as a thing without any limit of elasticity; a matter which obeys absolutely to the energies. This idea has been evoked by Eisenstein on the subject of animated drawing as: the realization of the idea where the “world” is restructuring all the time with fluidity, with the limit only the artist’s fantasy. If Chateau consider plasma as a “constant stream of transformational plasticity”, still, this differing state is in the end, as a closed circle, sending back directly to the original idea of the plasticity of thoughts, formulating the following dialectic pattern: on one side the form, definitely shaped and on another side of plasticity, the absolute (and inimitable) elasticity and flexibility of mind. Then, in between, forms “with a versatile finality either evoking transformation or longing for a certain stability”.

To us, the notion of plasmaticity is still relevant because it helps defining a specific plasticity of matter and concrete forms which is not based on the elasticity of mind model but on a matter...
which is literally inhabited by thought because the ideas are not using matter as it is but they are redefining matter itself. If plasticity is better to define live action cinema it is because it is the perfect crossing of the two notions Chateau revealed; the forms being done once for all and solidified, then activated indirectly by thought, being it the action of body or the action of camera (the field modifying the perception of the body and the body modifying the perception of the field).

Saying the Stop motion moving picture is like an image of thought is speculating but on a virtual basis we could say it is sharing the same modality. Indeed, somehow the concept of plasmaticity was buried under the concept of plasticity for there was no medium able to be absolutely versatile and manipulable and because there was a need to define this power or this “art” of giving the form to something. But in the end, with Stop motion, it seems that what was thought conceptually is now made real to perception.

In all, plasticity is more about a matter or an object to be able to keep its form after the force has stopped to model it (the form, once fixed, keeping somehow the marks of the forming effort) as if the form was thought as a dynamisation of matter springing from a dynamic thought. For our part, with Stop motion, plasmaticity is more about transforming or impulsing to an inert matter an absolutely and continuously versatile “behavior”. Indeed, the etymology of “plasma”/“plasm” is sending back in ancient greek to the idea of an object modelized specifically from using a versatile matter – which is now absolutely versatile in its substance thanks to its frame by frame virtuality.

... leading to a new idea of “thought matter”.

In fact, what is really plastic and versatile in the Stop motion creation is not the matter in itself but the ideas holding it to the point these last ones are compensating the total absence of versatility of the matters (not moving during the shoot) and of the image itself. The point of view and the camera stands still. Even when imitating the live action travelling we still can’t talk of it as movement stricto sensu, the camera being not effectively moving (the cinema camera is more like “crossing” or “digging” the space). In fact, the two elements that are, in Chateau’s point of view, making the image plastic are absent from Stop motion. So, it is obviously another plasticity we find in it and which is this time directly linked to and based on mind’s power of formation. The movement’s virtuality, being now plastic, or better said “plasmatic” is now relying on the creativity of thoughts assembling and articulating each picture.

If plasticity is about the will to form and the idea building or constituting the form, with Stop motion, the idea is not building anymore the form but is structuring the matter itself, its quality; there is an autonomy of matter as free as the thought, and it is not a physiologic structure but a virtual structure. Mind has a free will for it is not aiming to drive the matter into a specific form but also because it is liberating matter of all its limitations.

The plasmaticity is not about the idea’s construction of the form but more about the animation of the world. If cinema is reanimating the world as it is seen, felted and thought, Stop motion on its part is breaking the limits of elasticity of matter on which plasticity was founded previously. Paradoxically, cancelling by the photography the very plasticity of matters, petrifying them – breaking the possible influence of any forces on it – is making it an absolute matter; in fact, as absolute as mind’s elasticity. It will be virtually submitted to any kind of modification possible without crossing the least resistance. This lack of elasticity limit (on which plasticity was based, precisely) is naturally related and more effectively relating to mind’s absence of any limit of elasticity, being absolutely flexible. Indeed, thought can inscribe its full dynamicity into a concrete form and through a virtual magmatic matter (thanks to the mind’s presence between and in each frame), whereas previously, the construction of forms’ work was just an imitation of the way forms appear in thought. With Stop motion, they are a real action of it, on concrete matter and so as to say: in act.

Another aspect of this state is that the fixity of the picture is inducing a not much handleable material and its elements are not pictural creations (spaces and matters) as it is in most of animated movies. So, they are precisely not really inclined to plasticity (the abstract body of an animated drawing was on the contrary absolutely plastic as Eisenstein pointed it) but the image is somehow and finally “plastic” through plasmaticity.
In all, it simply is not really its matter which is plastic but its movement for it is directly the ideas’ dynamism that is giving its internal structure to the form, now dynamically. The matter can now be said to be thought not because a thought is at the origin of a form and structured it but because thought is actually expressing itself in the matter, as the very matrix of the forms.

**Movement’s own plasticity.**
In the end, with Stop motion, mind is invited to discover by its own means a new plasticity through photographed matter. The plasticity of thought is not another modality of plasticity applied to matter. Differently here, if matter cannot, as Dominique Chateau thinks concerning cinema, permit to rethink the properties of mind, instead, it make possible to think a plasticity that only exist in movement as Jean-pierre Esquenazi” introduced it in “Eisenstein, l’ancien et le nouveau”. And more, it is allowing us to experience in act and effectively mind’s plasticity (or elasticity).

Here, the enterprise of thought on matter is consisting precisely in making a not plastic matter actually plastic through the movement. With Stop motion, the material transmutation is not based on the general intellectual process of mind as a model but on a singular application of the dynamic of thought. It is expressing the plasticity of thought by using an intellectual and particular process of construction of the film frame by frame. With this medium, the matter itself gains its own fiction and the motion its own plasticity through plasmaticity. To finish, we could evoke the concept of telekinesis. Indeed, with Stop motion it is like if the thought could not only grasp but literally grab and take hold of matter. We’ll conclude here that Stop motion is exemplifying, that way, what is plasticity of motion, in the overall arts of motion.

**References**

Narrative through Visualization: the Creation of Images from Hard Data in Novels, Cinema and Television.

Roberto García Madrid.

Abstract

The experience of fiction that literary texts offered, relied on the reader’s capability for translating the textual description into mental imagery that was able to build a whole narrative universe. As abstract information has become relevant for the stories to take place, especially in the science fiction and detective genres, graphic and audiovisual media have found new ways to represent data through visual images in order to provide sense to the narration. Even though visualization through graphics is no longer a narrative effort performed by the reader or spectator, the visual image must be designed to embody the essential content of the story as well as the accuracy of the data described by the text, hence displaying an image that can appeal to the reader’s memories, desires and expectations. As culture plays a fundamental role in the way visual images are expected to look, representation as a graphic expression demands special attention from visual artists and designers. Since some kinds of information were not always meant to be part of narrative systems, their representation was traditionally circumscribed to be read by expert eyes only, some narrative genres face the need to support their plots in the presence of this kind of abstract information. As it can be seen in stories like Michael Crichton’s The Andromeda Strain and the TV series under the same name in 2008, the graphics used to represent information transcend the infographic intention by entering the realm of narration through visualization of information supported in graphic and animated images produced either for novels, movies or TV.

Keywords

narrative, visualization, information, graphic media.
1. Introduction

Information, understood as hard abstract data, has been a crucial subject for image and animation designers for the past decade. As nano, genetic, and medical sciences have had a meaningful development, information inherent to these fields has been taken to other environments such as education, editorial science circulation and audiovisual narratives for cinema and TV. Since information is now meant to be read and seen by several different kinds of audiences, visual representation has become a priority since it’s one of the most common means to achieve accessibility to abstract contents.

Visualization is a cognitive operation intended to create images for what’s being heard or read; these images can be visual, acoustic, kinetic, etc. This kind of images is the product of the symbolic creative effort of an individual psyche; therefore it doesn’t strike as odd that they are perfect matches for a reader’s expectations no matter how inspired these pre-existing notions might be. However, when it comes to contents that are not expected to create a fictional effect but to suit an informational intention, visualization shouldn’t be as opened; thus the use of graphic images as support for scientific texts has become a common place. Visualization of abstract information allows the reader a clearer and faster access to data formerly expressed as numbers, tables, formulas, and even text. It has turned out to be a quite effective tactic for sciences texts books and magazines as well as for TV shows like documentaries, and news networks, among several different kind of audiovisual broadcasts.

Even when the representation of accurate data for scientific and educational purposes has been the main use of graphic visualization of information, other aspects of media have shown interest in its expressive potential. The science fiction novel, particularly those works known as “hard science fiction”, pays special attention to technical detail and scientific accuracy. Therefore adaptations made either for cinema or TV demanded a careful arrange of data representation since information is the core of these narrative plots. The same happened when detective stories took over the TV screen and got deep into forensic sciences and investigation: the presence of data was so significant, that the essence of stories fell upon the understanding of this graphic information.

One of the main consequences that the hard science fiction and detective genres have to face now a days, is the way data is going to be represented on screen and how are the visual graphics meant to be designed in order to convey the narrative intention of the script. Particularly, we intend to pay special attention to the criteria followed to select which information will better support the plot in these audiovisual narratives which are mainly based in the presence of abstract information.

2. Visualizing hard data

Visualization of hard data can be explained from, at least, two different angles [1]: first, visualization implies the exposition of information that is already understood and that is meant to be communicated. This aspect can be clearly seen in educational productions like documentaries and tutorials, and when the intention of the graphic is to reiterate or to emphasize an important point that was previously shown. The second angle involves the display of data to solve a problem that still offers an enigma; from this point of view, the graphics are intended to clarify the variables involved in a system of information, thus the pursued goal is to build a connected sequence of data that can be meaningful and therefore useful.

As is evident, the way information is represented follows a communication intention that can support the development of events when used for narrative purposes. Visualization as a concept appeals to different epistemological fields, and it can either refer to imagination and the creative act, or to the computing technologies as the possibility to show the information that lays beneath the data-bases and their communicational goals, especially in fields like engineering and hard sciences. As it’s explained by Frankel & DePace’s “Explanatory graphics can clarify or strengthen an argument by guiding us through data or concepts. Exploratory graphics draw us into the research process, allowing us to discover patterns and relationships ourselves.” [2]

So far, the role that visualization of information has played as a vehicle for thinking and problem solving has been clarified; however it’s definition is still missing. In the book Readings in Information Visualization Using Vision to Think [3], the authors Mackinlay and Shneiderman offer the next description for the term: “The
use of computer-supported, interactive, visual representations of data to amplify cognition”. Despite the fact that their words draw a clear line that circumscribes the term inside the engineering knowledge, the same authors also mention later in that same paragraph that “The purpose of visualization is insight, not pictures”, while referring to Hammer’s work of 1973, Numerical Analysis for Scientist and Engineers [4], that “The purpose of computation is insight, not numbers”. This way of understanding the term has a very powerful essence since it’s alluding to a moment of comprehension in which people experience visual graphics as means to fathom the deep sense of information. In consequence, visualization as the production of visual graphics is meant to take the intellect beyond what is being offered to the sensitive perception. For instance, a drawn map is meant to allow people to arrive to a determined destination, so the main objective of this visual information goes beyond what is shown on the paper and seeks to achieve an efficient communication process that can be translated into actions (people actually arriving to the destination).

According to Nathan Shedrof [5], this process can be described as a succession of the next elements: Data-Information-Knowledge-Wisdom, being the last term described as the ultimate comprehension level in which a person is able to identify patterns and meta-patterns. However it’s not only the data on a graphic support what allows deep comprehension but also the way it’s visually represented: the map that was previously mentioned won’t be enough unless its visual images accurately describe the route to the reader, for instance, what comes first and happens afterwards. Therefore, the so called “accurate images” must involve expressive resources, such as graphic styles, as well as a coherent order of data. Consequently, the narrative perspective presents itself as a way to create this significant arrange of information details. Accuracy is also bounded to the context and visual culture of the readers and, of course, the narrative resources and structures that are familiar to them.

In the book The New Nature of Maps, Essays in the History of Cartography [6], the author J.H. Andrews writes about the problems that have emerged through history when reading a map. Aspects such as the knowledge and intention of who drew the map as well as the data and graphic codes of time and context, become determinant not only for the graphic characteristics of the image but also to the way it can be read and interpreted. A map is not meant to be a picture of reality but more an abstract representation, that’s why the reading and understanding of this kind of information is more an act of faith that shares a lot with the act of fiction.

Following Shedrof, he offers the next explanation for this last point: “One of the best ways of communicating knowledge is through stories, because good stories are richly textured with details, allowing the narrative to convey a stable ground on which to build the experience” [7]. Stories involve the presence of a sequence of events, and time is a predominant circumstance that must be taken into account by design. The author Paul Mijksenaar [8] considers this to be the main element that links design to storytelling. Visualization of information grant static images the faculty to tell stories by showing different events in a single frame. Furthermore it also allows plots to develop since information can drive characters into certain direction and even trigger their actions.

3 From data to the narrative image
To think about narrative is to be thinking about two things: a series of sequenced events and the memory to put them together. Even when the narration might be offered in many different orders of enunciation, the sequence of events usually follows a causally arranged story line and this characteristic can be supported by the visualization of information when the needed data is too abstract for a specific audience to understand. In literary texts, the reader had to imagine the way an abstract description explained something happening in the narrative world; it can be said that this cognitive work was very close to the classic concept of diegesis [9]. In contrast audiovisual productions can show the viewer the visualized data; however, this is still far from being called mimesis not only because of the abstraction of the graphics but mainly because these graphics, at least in the narrative intention, are not meant to “show” anything, but to make the audience either remember or to think about something else that would convey the deep sense of the story that’s being told.

A narrative sequence of events consists commonly in a begin-
ning, middle and an end [10], and the narrative mechanisms that can make the story go from one stage to another. Despite the characteristics of the described events, the links between them can be even more important than the facts themselves since the plausibility of a story, particularly in science fiction and detective genres, relies in the cause-effect chain built by the narration. Visual graphics are intended to support the narrative flow by appealing to the viewer expectations, as well as by functioning as a character that has, at least, two main functions: first, to work as an anaphora, this is to repeat what the story has shown so far in order to remind the audience of the most meaningful facts. Second, graphic information becomes the sustenance of information yet to be worked out and works as an engine that moves the characters to react in a particular way (since they are also interpreting the data) and to take specific actions. 

Visualization can be developed through different kinds of techniques and media; however, its effects can be seen even in the most basic use of data graphics. In Michael Crichton’s novel The Andromeda Strain (1969), Dr. Charles Burton printed the virus behavior pattern and figures out that blood coagulation begins in the lungs and expands through the rest of the human body; however, Burton already knew this and what’s left to be discovered is if the amazingly abrupt dead is caused by a single terminal clot in the brain while the rest of the blood coagulates at a slower rate. Figure no. 1 shows how the virus is affecting the blood and what parts of the body are the first to be affected. The graphic summarizes the character’s observations but also provides the elements to move on to the next question “If coagulation can be stopped, can dead be prevented?”, and to take his research in that direction.

In audiovisual media, visualization is also used to keep the audience’s attention focus in certain information. In minute 53 of the 1971 film (Wise), Dr. Hall is trying to put together a series of images that the film presents simultaneously in order to show what the character is thinking; each image is framed to show the viewer the specific detail to pay attention to. Supported by the dialogue of other characters, this visualization is intended to show what these scientists are dealing with: a new form of life that came to Earth in the meteorite that crashed two days ago. The next set of frames shows how this kind of answers were previously discard-

ed as absurd, creating an irony by placing a microscope view of the virus in the center of the screen while stating the phrase “Even with a microscope they are blind” in a dialogue between two other doctors. As it can be seen, the graphic information is not only being used to show data useful to understanding the narrative conflict, but also to create an expressive feeling of damnation by using visualization as a rhetorical figure.

As it can be seen in both examples, visualization of data is not meant to be what the story is about. It’s rather a narrative mechanism, even a character, that is pursuing insight without being the protagonist of the plot; nevertheless the abuse of this resource can lead to an overflow of visual data that is failing to enrich the story and causes the audience to get lost in a visual stimuli tangle. Consequently, designers should be aware of what kind of data will be meaningful for a plot to develop and the most appropriate way to graphically represent it. This would imply that the creator of graphic images must be able to achieve a deep understanding of the story he or she is going to tell by using images.

Hence, we arrive to a central question: How can we select the data that will be represented graphically? Supported by what has been explained so far, it can be said that visualized data that came from novels serves either the purpose of reminding the reader of important information that the plot needs in order to be understood or it shows the pieces that must be connected according to the logic of the narrative universe shown by the novel to solve the conflict. If the graphic information shown is not really useful for the characters’ actions, it should not appear at all. However it’s not necessarily compulsory to get rid of this graphics since some of them are meant only to create a visual environment. But even when the graphic is intended to act as an ornament it must support the story. However, in the hard science fiction genre exceeding data is very likely to cause confusion and prevent the story from making sense to the audience.

4. Narrative visualization for extraterrestrial virus

The themes that are inherent to the science fiction genre usually demand graphic elements intended to increase their plausibility. Nevertheless in order to convey the deep narrative sense of a science fiction novel or movie, designers must keep in mind that
this kind of narrative is usually meant to be an allegory and should be interpreted symbolically. Therefore visualization is required to allow the reader or the viewer to access the latent meaning of stories, which involve the awareness that data interpretation is intimately bonded to the social, political and economic contexts.

Robert Wise offers a definition for science fiction that clearly states some of its graphic requires: “I take science fiction to be the branch of literature (and by extension films) that deals with the effect of science and technology on the human condition and that explores the human condition via science.” [11] The impact of artifacts and their use in human life are central for this genre, and now, the artifacts that Wise and other film makers might have had in mind have changed: information has become decisive for contemporary societies as it transcends the material support of tridimensional objects. However the narrative representations tend to allude to the same basic human conflicts, for instance, the fear of being invaded by alien forces (either from this world or another, or even other dimensions).

With the production of movies like The Day the Earth Stood Still (1951) and The Andromeda Strain (1971), the filmmaker Robert Wise acknowledges the topic exposed by H. G. Wells in his The War of the Worlds (1898) and by Orson Welles’ radio broadcast under the same name (1938). Wells’ production became a legendary narrative product because of its radio format credibility, which was supported by the social reliability people invested in such medium as a provider of legitimate information. Acoustic information was quite suitable for the intended effect, while TV, not as much, since it would have been required to actually show the flying saucers [12] and the creation of such an image was not still in the range of obtainable realism by the visual effects industry. Visualization of information is read and understood from a contextual angle that might change as years go by. Most of Michael Crichton’s works are clear examples of this. As a quite versatile writer, Crichton built his plots by supporting them on accurate data that could provide a source of plausibility to his stories, whose topics were usually related to technological and scientific issues in forced during the years of their publishing. Thus the Cold War subjects during the late sixties and the genetic engineering and chaos theories during the early nineties, present great examples.

His 1969 novel, The Andromeda Strain, soon became a best seller. As a narrative product of the sixties, the story described a scientific environment with an important computer presence that generated and printed meaningful graphics for the story. Figure no. 2 shows the reader the hexagonal structure of the virus that will help the scientists to eventually learn about the instability of the virus. The first image was taken from the literary text, while the second one is an animated image designed for the 1971 film.

Even when the research on graphic information will not be developed until the next decade [13] [14], both Crichton and Wise are aware of the impact that information can have in the course of a story as well as the way this information is presented to the audience. In the miniseries of 2008 (Salomon) the graphic representations of the Andromeda virus have added motion to the image displayed on screen; this animation is a 3D graphic that shows not only the virus structure but also its behavior and movement as if it was a live and breathing organism. As it is showed by the historical progression, audiences have different expectations when it comes to the plausibility of images and the role they play in the development of a plot; while a scheme image showed in 1969 what was needed to know about the Andromeda virus, almost forty years later more visual information is needed to allow this kind of plot to work as a fictional experience.

Graphics describing spatial information are also relevant for the science fiction narratives. Visualization of space help to build the settings for the stories as it has been seen in the 1971 The Andromeda Strain film and in several contemporary films of the same genre such as Resident Evil (W. S. Anderson, 2002) and Prometheus (Scott, 2012). In both films, visualization of spatial information is used not only to create the setting but also to show the
routes the characters should follow in order to escape the different kinds of creatures they are facing. This narrative phenomenon can also be observed in other media such as videogames, in which maps are a very common graphic element that not only supports the narrative intention by providing a scheme of the setting but also helps the players to take tactical choices for their gameplay.

As it’s shown in Figure no. 3, the behavior of a virus and its speed for spreading across a territory usually pushes the characters’ actions; they must design a course of action and act in order to either defeat or to escape the virus. Even when this information can be expressed through dialog, the visual graphics allow the audiences to not only realize that time might be running out but also that space is closing up. Therefore, this kind of visualized information is intended to support an atmosphere of tension and the feeling of being cornered.

Despite the fact that information might be shown in different media to prevent larger damages from happening when it comes to actual crisis, the effect it might cause is pretty close to the ones described by science fiction narratives. Figure no. 4 is describing diabetes behavior following statistical facts taken in the U.S. territory; even when its former intention is merely descriptive, the color selection that indicates the high number of cases (orange over blue) can be taken as a quite aggressive accent. Since poverty related with ethnicity can be a very sensitive subject, it can be said that this information is permeated by various emotional and ideological aspects that can cause a feeling of uneasiness to appear the same as conveyed by the visual graphics in the movies. Furthermore the release of this kind of graphics can easily be intended to pursue the same result: to make the human population take certain kind of actions according to tactical choices based on their access and interpretation of information.

Graphics about movement over a territory deal with the description of space as narrative dimension. However maps are not the only source of valuable information for both plots and gameplay; models of the architectural structure of the setting in which a story takes place are often used to set the order of priorities, the level of difficulty or the progress of achievements in a narrative system.

Figure no. 5 shows how models of research facilities in which virus are kept have evolved from schematic two dimensional vector based illustrations to tridimensional models that can be moved all around to show the audience different perspectives of the Hive. Even when the graphic styles might be quite different, both images are trying to show the audience and the players that the architectural structure is divided in levels that contain different kinds of virus, the more dangerous the sample the deeper it’s kept inside the building. The graphics make clear that the same mechanisms used to keep a virus from spreading, are the same obstacles that the characters must overcome to escape from the maze in which they are trapped; moreover the graphic helps the audience or players to for shadow what the plot will be about and even how to solve it, at least in these two models.

Information and the way it is presented to be understood by different audiences, is a quite relevant topic for designers and illustrators. As it has been explained so far, the creation of images that can show abstract data in order to convey a communicational intention must take into account not only the accuracy of the information but also the means of expression in which the visualization will be supported. The criteria for the selection of meaningful data must consider the narrative sequence of events as well as their causal connection among the main aspects to be taken into account. The same can be said of the technical resources that will be applied in the image production, not all data requires the latest...
visual effects to be narratively effective. Therefore visualization of information as a graphic process demands a deep understanding of the narrative intentions of the authors as well as the audiences’ expectations.

References

Abstract
This paper presents a practice-led examination of the process of designing depictions of characters in a picturebook, from the perspective of the illustrator. The focus explores the extent to which character, emotion and personality can be depicted using formal arrangements of shapes on the page.

In formalist discussions of picturebooks the focus is mainly on the finished picturebook. The development of the imagery from the perspective of the illustrator has largely been left unexplored. Based on the fairy tale ‘The Wolf and the Seven Young Kids’ by the Grimm Brothers, I made a book which references formalist structures of picturebook design. From an analysis of my approach to this book in conjunction with a discussion of the relevant background literature, an examination of the structures of a children’s picturebook and ways in which an illustrator can depict atmosphere and characters emerged.

A key outcome of this research has been a discussion from the perspective of the illustrator of the process of creating characters using formal shapes in a children’s picturebook. This discussion, based on an analysis of my practical work has demonstrated the possibilities of a variety of methods involving the use of shape and abstract backgrounds in the creation of atmosphere and the depiction of characters’ emotions and personalities in a picturebook.

Keywords
children’s picturebook, book illustration, practice-led research, character creation, formalism, shapes
Introduction
This paper is a reflective discussion of my practice-based exploration of the creation of a picturebook based on the fairy tale The Wolf and the Seven Young Kids by the Brothers Grimm. This paper explores my work in relation to a semiotic approach to structures in picturebook design as outlined by Moebius [1] and Nodelman [2]. The structural elements that will be discussed include colour, shape and the integration of pictorial and abstract imagery. Moebius and Nodelman focus their discussions on the finished picturebook. My focus is an exploration of the creation of characters and their environment from the perspective of the illustrator, using a formal design-based approach. Audience response is not discussed within the scope of this paper. My images are not representational drawings, but combine abstract and pictorial images to create tension and depict the personalities and emotional responses of the characters. I will look at the progression and development from initial sketches through to final artwork and discuss the artistic decision making throughout the process, investigating ways in which an illustrator can depict atmosphere and character.

Frameworks for approaching picturebook design
The variety of literature which analyses reading images demonstrates the complexity of the topic. As an illustrator, a formalist approach, which focuses on how images are made using compositional elements such as line, colour and shape seemed an appropriate method for my project. Moebius’ theory on graphic codes in picturebooks includes a discussion of line and colour, position and size, perspective, and disposition of objects on the page [3] This ‘grammar of images’ which investigates how illustrations work, is typically used in an analysis of a published picturebook. I intend to explore these frameworks, from the perspective of an illustrator, focusing on how the elements listed above are used in the creation of an image, from initial sketches through to final artwork. The creation of three characters and depictions of their personalities and emotions: the wolf, the kids, and the mother goat, will be discussed with regard to colour, shape and the integration of pictorial and abstract imagery.

Creating atmosphere
Using a fairy tale for the narrative allows an assumption of familiarity with the text on the part of the reader; enabling a visual retelling of the story. The textual elements of the narrative in my book are minimal. My book is largely wordless, with the majority of the narrative told visually. Shulevitz suggests that ‘by telling a story visually, instead of through verbal description, a picturebook becomes a dramatic experience: immediate, vivid and moving’ [4]. Combinations of abstract and pictorial images illustrate the story. This heavily visual approach creates an encompassing atmosphere throughout the book, which could be seen as visually describing the emotional or evocative element of the story, or emphasising the sensual pleasures of pictures. By approaching this narrative in a visual way, this discussion investigates how formal approaches in creating a picturebook can create atmosphere and emotion in a narrative. For example, there is a sequence in my book where the mother goat returns home to discover the wolf has come and has eaten all her children. In the text, this description is a few sentences long. In my book, this is exaggerated and stretched over a long section of the book, comprising full bleeds of a grey background with minimal, dusty black images. Visually it depicts loneliness, while the repetitive background maintains a rhythmic progression throughout the book. The use of grey double page spreads to depict thematically similar emotions including grief, loss and loneliness can be seen in Quentin Blake’s illustrations of Michal Rosen’s Sad Book (2004), which Salisbury and Styles describe as ‘overwhelmingly grey with a few telling, scratchy pen-and-ink lines, they depict utter misery’ [5]. However, Salisbury and Styles also outline Blake’s ability to lift the mood of his grey illustrations with a touch of yellow. Blake’s comments on his creation of these illustrations outline his feeling that ‘it couldn’t all be grey, and indeed the words themselves alternate feelings, of depression and of joyful and touching reminiscence...’ [6]. The use of colour to depict emotion in picturebooks is discussed in formalist approaches to picturebook design.

Colour: The young goats
Both Nodelman and Moebius describe the use of warm and cold colours to depict emotion in picturebooks, with blue typically
showing gloomy or sad scenes, yellow showing happiness and pink and red hues depicting a warm glow. Doonan develops this further and suggests that colour has a double role: indicating symbolism and the physical environment. She discusses the function that hue, saturation and tone can play in creating physical structure, such as how heavy an object can feel on the page. She looks at the emotional connotations of colours, and outlines how these can change depending on context, a red-ochre colour, for example, could be symbolic of danger, or of sunsets, or autumnal beauty [7].

Most of my book, The Wolf and the Seven Young Kids, is in black and white. Elements of colour are only used in the opening scenes of arcadia in the forest: the youth and innocence of the young kids and the birds singing in the trees of the forest, before the introduction of the wolf (Fig. 1). Originally, the trees in the opening scene in the forest contained leaves and fruit and were shown in colour. Cleaver discusses the symbolic nature of trees in picturebook illustrations of myths and folk tales. Within her description of illustrating a Canadian folk tale, she references trees as sacred groves, and also as symbols of fertility and seasonal change, transformative images of life and death [8]. In my book, the contrast between trees with branches full of fruit and leaves on the initial spread introducing the young goats, and bare branches on the next spread which shows the wolf for the first time, was too stark. The leaves were deleted so that the trees had bare branches in both images. Images of birds and the young goats in colour are sufficient to create the impression of an idyllic arcadia on one spread (Fig. 1), which is then contrasted by the bare branches of the trees on the next spread, which introduces the wolf (Fig. 5).

The colour scheme of the young goats is primarily made up of secondary colours, based on colours that would naturally appear in a forest: green, yellow, red and purple. References were taken from the colours used in Monet’s idyllic country scenes in his impressionistic paintings ‘Within the Forest’ and ‘Irises in Monet’s garden’. The young goats are shown in colour, except when they are tainted by the presence of the wolf, at which point they are depicted in black. Within my book, the emotional spectrum covered includes a focus on fear, grief and loss, which I have chiefly depicted using black and white images.

**Shape: the mother goat**

In the development of the mother goat character, I initially created an emotive painting of the mother goat when she discovers that all of her children have been eaten by the wolf (Fig. 2). Blake describes the use of human characteristics on animals as a device illustrators can use to allow the illustrated characters to make comments on the humans around them [9]. I considered referencing elements of Picasso’s Weeping Woman in this image in the character placement, with a focus on the character’s face and distressed eyes.

Gombrich observes that ‘the rendering of the exact nuance of facial expression is notoriously difficult’ [10]. While it is possible to convey depth of emotion using simple shapes and lines, which Gombrich exemplifies using the illustrated work of Jean de Brunhoff, who captures a multitude of expressions on the face of an elephant using a few lines and dots in the Babar stories, the subtleties in depicting the range of emotion to include sadness, grief, distress and a combination of these emotions is complex.

In this instance, I felt my depiction of the mother goat’s emotion was overly simplified. It appeared trite and sentimental. As I was unsatisfied with this portrayal of the character, I explored alternative ways to capture the character’s sense of grief without using facial expressions.

Arnheim discusses the complexity of making physiognomic judgments based on visual information. Facial expression and gesture combine subtle movements to convey a variety of nuances of meaning. Describing empathy theory, Arnheim outlines how visual information appraises the viewer of the situation, while leaving them to draw their own inferences from past experience. He states...
Progression from pictorial to abstract: the wolf

My original drawing of the wolf character in my version of The Wolf and the Seven Young Kids was a line drawing (Fig. 4). The scratchy quality of the line in this drawing suggests a degree of smugness or wiliness of the character, although the static body positioning suggests little dynamic movement or action.

How illustrators use line and the quality of their line is discussed extensively in formalist approaches to picturebook design. The use of line to depict emotion, for example, using strong, angular lines to depict anger, or dynamism, and softer, tentative or broken lines to show timidity, or fear has been demonstrated. In Understanding Comics, McCloud articulates this visually by drawing lines and mapping associations between the strength and direction of his lines with emotions that they could be seen to represent [13].

The use of line to depict action in picturebooks is outlined by Nodelman. He suggests that, when filled with colour, lines create shapes which gives objects solidity, weight and bulk. Without colour, line can more forcefully depict motion. He suggests that ‘generally speaking ... most of the black-and white drawing in picture books is cartooning or caricature, and most of it emphasizes action over appearance – not how objects look but what they do’ [14].

Similar to Nodelman’s description of black and white line drawing outlined above, my initial black and white line drawing is quite cartoon-like, which was not an effect I wanted. There is insufficient information to capture the solidity of the character, who is the main antagonist within the narrative. The written narrative of the fairy tale tells how the mother goat describes the wolf to her children (Fig. 3), the shape of the mother goat was placed over a photograph of a pane of broken glass and the symbolic aspects of the image were emphasised over the figurative. The image of the mother goat was created as a paper cutout in black card. In order to integrate this image with the background, a small grey outline around the goat shape was added. The black silhouette of the mother goat in the foreground dominates the spread and creates a layered effect on the page. The image of the glass in the background breaks outwards, fragmenting the page, creating a sense of movement and distress. The integration of abstract and pictorial images as a device to portray the moods and personalities of the characters in my version of The Wolf and the Seven Young Kids is further explored in my creation of the wolf’s character.
kids as a character who would love to gobble them up, a master of disguises, but identifiable by his rough voice and black feet. The initial sketch lacks sufficient tangible information to capture the sense of anxiety and trepidation that the young kids would feel on hearing about the wolf.

Making the character less anthropomorphic by setting him on four paws instead of standing on two lessens the cartoon-like feeling of the drawing (Fig. 5). Using small shapes next to one another in a pattern allows the character’s form to be shown without adding weight to the drawing on the page. The use of white space within the character emphasises the small black shapes which represent teeth and fur, while allowing the character to blend into the background of the forest. The use of white space rather than line in this final drawing enables the image to communicate details of setting and character without using colour. The forest in this scene shows the bleak, empty branches of the trees, suggesting coldness and death. The integration of the character with the background is intended to reflect this atmosphere in the image. The wolf is positioned on the right hand spread, but facing towards the left, snarling at the viewer: he is depicted as aggressive and partially camouflaged by his environment. While this image was more successful than the original line drawing in capturing the aggressive nature of the wolf, it lacked subtlety as an image. Following on from the use of abstract backgrounds to create atmosphere, as described above with regard to the mother goat, I looked to integrate this into depictions of the wolf’s character.

The final artwork for this double-page spread (Fig. 6) introduces elements of shape and an expressive background to suggest the emotive elements prevalent in the narrative. An image of crumpled paper, with ink lining the creases, creates an organic background which suggests the roughness of the wolf’s voice. Tension is created in this image by alluding to a disorganised, or fragmented atmosphere, with jagged lines and sections of shape unfolding unpredictably and extending beyond the edges of the page. Overlaying the background, images of the wolf’s black feet are stamped on dark, round disks, giving weight to them. Kress and van Leewen discuss the organic nature of circles, which in this instance integrates with the background image, while creating a subtle contrast [15]. The absence of the character emphasises the fear of the unknown. In this example, the illustration of the wolf progressed from mimetic to symbolic in a search for expressivity.

Common characteristics of the final images of the wolf, the seven young kids and the mother goat in this book include the use of simple, repeated shapes with little movement, or facial features. While the shapes are pictorial rather than purely abstract, the characters are shown as simple graphic shapes, their emotions, personality and atmosphere of the pages, is created through the backgrounds, which are largely abstract, and the images they are placed in.

Summary and Conclusions
This discussion based on my practice-based exploration of a fairy tale The Wolf and the Seven Young Kids by the Brothers Grimm outlines the process of character design from the perspective of an illustrator, with focus on creating atmosphere and depicting the character’s moods and personalities. My version of the story
of the The Wolf and the Seven Young Kids uses little text throughout the book. The visuals portray the characters, their emotions and create atmosphere throughout the book, chiefly through the use of background imagery. By approaching the narrative in a visual way, an exploration of how formal approaches to creating a picturebook can depict atmosphere and emotion emerged. While creating these illustrations, I investigated a number of approaches to depicting character and emotion. These originated with simple line drawings and quick sketches of the characters, with overt facial expressions used to depict emotion. Within the creation of my artwork, the illustration style progressed from a mimetic to a symbolic approach in my search for expressivity. Formalist theories outlined by Moebius, Nodelman and Doonan suggest the possibility of depicting emotion in an illustrated picturebook through use of shape and background, black and white imagery and colour. This exploration from the perspective of the illustrator provides an insight into the development of characters and depictions of their personalities and emotions, which can be consciously applied to the illustrative process.

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Abstract
This paper will describe the ongoing Meta_Body project, first held in an online virtual environment and in a "real life" art exhibition, now carrying on in the metaverse creative flux. The focus will be on two aspects of this project — the constitution of virtual corporality and the shared creative process of avatar building, sharing, transformation and embodiment. We will explore the metaphorical aspects of virtual corporality and embodiment and we will approach the possibility of a creative process as an aesthetical experience.

Keywords
avatar, metaverse, produsage, shared creativity, virtual corporality
1. Introduction

Meta_Body is a project initiated by Catarina Carneiro de Sousa also known as (AKA) CapCat Ragu and Sameiro Oliveira Martins AKA Meilo Minotaur¹, in the virtual environment of Second Life (SL), as a response to an invitation to participate in the 6th edition of the exhibition All My Independent Women (AMIW), an event which takes place irregularly around the world, curated by the artist Carla Cruz. The 2011 edition continued and extended the previous one, a proposal of a collective reading of Novas Cartas Portuguesas/New Portuguese Letters by Maria Isabel Barreno, Maria Teresa Horta and Maria Velho da Costa, a 1972 book that was banished and caused persecution of its authors by the dictatorship (the case of the Three Marias), thus becoming a milestone in the history of feminism in our country, Portugal [1]. The subtitle of the 6th edition was “Or Rather, What Can Words Do?”, a question quoted from the book. It took place in Vienna, Austria from November 3rd until December 3rd, 2011, at VBKÖ (Austrian Association of Women Artists) space. In the publication that followed the exhibition one could read Maria de Lourdes Pintasilgo’s re-edited preface for the book’s 3rd edition, dating back to 1980. She highlighted that, in the book, the body goes beyond its representation. It works as a metaphor for all forms of oppression hidden and not yet overcome [2].

This idea of a metaphorical body was crucial to our project. The virtual experience of the body is not exactly an experience of the flesh. Although metaverse experiences have a perceptual and sensorial aspect, they continue to be experienced in our organic body, not in our avatar body.

The word metaverse was coined by writer Neal Stephenson in his 1992 novel Snow Crash. In it, the metaverse was a fully immersive three-dimensional space where people interacted via avatars. Today, the term has been used to refer to the collective online space in general, but more particularly in the case of virtual worlds — three-dimensional computer generated spaces, which can be experienced by several people at once. Places inhabited by people and enabled by online technologies [3] .

For Beth Coleman the concept of avatar can refer to all digital extensions of the subject that interact in real-time over the telecommunications network [4] . However, we will essentially use this term to address the animated figure that represents the user in 3D digital platforms.

In the metaverse one could look at a very realistic virtual cake and salivate, but if our avatar eats it one won’t feel its flavour. The virtual body is a metaphorical body and therefore a body of expression and language. We focused on this aspect, in project Meta_Body, thinking of the avatar as a body / language open to experimentation. A couple of months before the exhibition opening, CapCat Ragu and Meilo Minotaur built and distributed at Delicatessen¹, their SL region¹, a set of 18 avatars, freely available and open to be transformed and shared with other SL residents. A note was distributed along with the avatars inviting users to share on Flickr and Koinup groups whatever derivative work they produced. At VBKÖ only the derivative work was exhibited. 120 works were selected and presented as virtual photography or machinima⁴, with a total of 80 contributors integrating the project Meta_Body for AMIW. The total number of works now shared between Meta_Body’s Flickr and Koinup groups exceeds one thousand.

This selection was shown again in 2012 in the AMIW Video Lounge at the Women’s Art Library, Goldsmiths University of London, at the Vox Feminiae Festival in Zagreb and at Brotherton Library Special Collections University of Leeds. This time, a video presentation of the project was added to the derivative material⁵.

Meanwhile, CapCat Ragu and Meilo Minotaur decided to promote a second phase of this project — Meta_Body II. Having the Meta_Body project avatars as a starting point, SL residents were invited to share their derivative avatars, using any of the parts of the Meta_Body project avatars, parts built by the users and/or parts built by other developers, since their specified license allowed redistribution with full permissions. All avatars had to be provided with full permissions, meaning that they had to be copyable, shareable and open for transformation. 22 creators built 26 new avatars, from well-known metaverse artists and designers to absolute new residents, trying SL and avatar building for the first time. These avatars are now being distributed at Delicatessen. For this purpose Meilo Minotaur and CapCat Ragu built four virtual installations, in homage to the avatars and their creators. Luís Eustáquio AKA Takio Ra was invited to make a sound intervention.

². A region in SL is a 256m x 256m virtual land area hosted by a single simulator process. Usually they are referred to as sims [3].
³. Virtual photography consists of still captures from inside a virtual environment (post processed or not), while machinima is video captured in the same fashion.
All the sounds used in these soundscapes are also being shared with the residents with full permissions.

The method used to implement this project is a shared creative process, one where several participants are authors at different stages of the project, and where some of these individuals permute between users and producers of the materials distributed, thus becoming produsers [6], as we will describe later. There are, however, three different approaches to the concept of shared creativity — collective creation, the process used by CapCat Ragu and Meilo Minotaur in the building of the avatars and the virtual installations, a cellular group acting as one author, in a very intimate creative process; collaborative creation, a process where each artist maintains her authorial personal mark in a creative dialogue with other artist/s, the way Takio Ra contributed to the project, by creating soundscapes for the virtual installations; and distributed creation, which was how derivative work was created using the first set of avatars to build new creations which, in turn, fed the pool of materials available for the making of new creations.

2. Virtual Corporality

On SL, avatar building is always a shared creative process, as residents can modify their avatars but they can also upload their own contents, designed outside the platform, such as textures, meshes, animations and others. Avatar designers are, therefore, the residents who can create themselves and use parts that other residents share or sell. The way virtual corporality is constituted in this environment is very often the result of a distributed authorship and, therefore, a shared creative process.

A good example of this kind of approach is the work of designer Elif Ayiter AKA Alpha Auer (and others) who draws the contents of the brand alpha.tribe in SL. Countless artists have used her avatar designs for the creation of machinimas, virtual photography and performances. In her sister virtual installations Anatokia and body parts two sets of avatars were distributed as part of the artwork, relying on embodiment as a fundamental part of the aesthetical experience [7]. The author also created a series called The Avatar of the Uncanny Valley, for which she constructed a set of avatars constituted by elements made by other creators [8].

Eupalinos Ugajin is an SL based artist who uses his own avatar as artwork, adding a performative dimension to his approach. His very unusual avatars are designed using not only his own creations, but also artefacts made by others. He compiles these avatars in his Flickr set [SL] Will you AV me?

If one thinks of the virtual body in the way Pierre Lévy refers to virtual, one has to acknowledge that virtual does not oppose real, but the term actual. Virtuality is not about possibility, but about potency. For this author, realization is not a creation, in the full sense of the term, because it doesn’t imply the production of something new. The possible is just like the real but without an existence; the virtual, on the other hand, asks for a resolution, is problematic, complex. In this sense, actualization is a solution to a problem that goes far beyond the problem’s statement. The actual is not predetermined by the virtual, as Lévy reminds us, it is not its realization, but an answer to it [9].

2.1. Virtual Body

Similarly, the virtual body doesn’t oppose the real body, but the actual body. It is not a possible body, but a potential one, problematic and complex. Frank Biocca tried to unravel this complexity when researching bodily presence in virtual environments. He distinguished three different kinds of body: objective body, virtual body and body schema.

The objective body is the physical, observable, and measurable body of the user. The virtual body is the representation of the user’s body inside the virtual environment. The body schema is
the user’s mental or internal representation of her body [10].

Biocca’s research led to the belief that the always-unstable phenomenal body could be radically altered by use of media [10]. This was confirmed by Nick Yee’s, N. Jeremy Bailenson’s, Ducheneaut’s and Nicolas’ findings, whose studies demonstrate that behaviour can change according to the avatar’s body constitution, not only online but also in offline interactions, e.g. users of taller avatars performed better in negotiating with shorter avatars, with this effect persisting outside the virtual context. To these and other changes in behaviour resulting from the handling of avatars, the authors called Proteus Effect [11]. The impact of avatar design in the phenomenal body was also addressed by Jacquelyn Ford Morie, who highlights that in virtual environments “our experience is very much influenced by how we perceive our self, and yet, within most immersive environments as they exist today, this choice is still made by the VE designer” [12]. And also by Celia Pearce, who emphasizes the importance of avatar design in multiuser virtual environments:

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 [13].

Maeva Veerapen specifically studied the constitution of a phenomenal body while using an avatar in SL. She reminds us of the concomitance of two bodies in the virtual world, the user’s and the avatar’s, one organic, the other image. The resident’s body has no direct access to the metaverse; she uses the avatar to interact with other people, objects and space. Yet the avatar is not sensorially or perceptually able, it is the user’s body that senses and feels. So, how is the phenomenal body constituted between these two bodies? Veerapen advances three conceptions of the avatar: the avatar as prosthesis, as phantom limb and as equal [14].

A prosthesis extends the potential of the phenomenal body. As the resident cannot have direct and immediate access to the metaverse, the avatar becomes a prosthesis that extends the frontiers of the resident’s body. Sometimes an amputee can have sensations in her missing limb, i.e. the phantom limb. Although the avatar never made part of the resident’s body, it can lead to feelings other than by direct stimulation, e.g. activating the memory, adding an emotional dimension to the virtual experience.

As demonstrated, the resident’s body cannot fulfil all the tasks of a phenomenal body in the metaverse, since it does not have direct access to the virtual world. Neither can the avatar’s body, as it is not yet sensorially and perceptually enabled.

That is how Veerapen arrives at the conception of the avatar as an equal. Across the physical body and the body of the avatar, we have all the qualities necessary to constitute a phenomenal body. This cannot, however, be a simple sum of the two bodies; it has to be their symbiosis.

This duplicity in the relations between users and virtual worlds is also addressed by Morie, who reminds us that as we enter the virtual world we are entering a world that is not completely imaginary, but still is “not fully based in solid physicality” either [12]. Corporality in virtual worlds juxtaposes two bodies and two conceptions of materiality, co-dependent on each other to constitute an entity. In order for the avatar to link in this way to the physical body it requires a metaphorical nature.

2.2. Body As Metaphor

Corporality as a metaphor, however, is not exclusive of virtual environments. Our bodily experience seems to considerably affect the way we conceive the world. Lakoff and Johnson suggest that the ordinary conceptual system is fundamentally metaphorical — in fact, a significant part of our concepts are organized in terms of spatial metaphors: “I feel down”, “cheer up”, “he is out of reach”, “she is in love”, “I look forward to meet you”. Up / down, in / out, forward / backward, these metaphors are rooted deeply in our physical and cultural experience of the body [15].

Metaphors are also paramount to the way we handle computers — we “drag” items from one “window” to another or to our “desktop”, we archive data in “folders” or send them to the “trash”. In fact we are just providing commands to the computer, but we experience them through simulations, in a metaphorical way that is fundamental in the design of digital interaction [16]. In the same way the virtual body is a metaphorical one.

Body as metaphor, however, is not exclusive of virtual environments, as we saw before. Gender studies have long referred to a semiotized dimension of the body:
The body is a construction, a representation, a place where the marking of sexual difference is written, and it is because the body is a sign that it has been so invested in feminist politics as a site of our resistance [17].

The semiotic body plays an important role in our everyday life, but stripped of its physical component, the symbolic aspect of the body becomes prevalent in virtual environments. The avatar is a body of language and expression, open to further symbolic investments. One can choose the stereotype metaphor of gender, ethnicity, age, etc., or move beyond it and rethink, rebuild this metaphorical body. 

Meta_Boy avatars ranged from the realism of old Godiva to the transparent improbability of Chart Man, yet they never became entirely abstract, and they never lost their metaphorical dimension. By sharing them as transformable artefacts we intended to open this avatar language to different forms of expression. The embodiment of the avatar itself could become, simultaneously, an aesthetical experience and a creative process.

3. Shared Creativity

The Meta_Body Project relies, in fact, on a particular creative process we call shared creativity, in which we cannot reduce creativity to a single author. Several components of the project are built by different authors and producers, working together towards a flexible, unstable and always unfinished body of work. A creative flux fed by many streams that work in different creative processes, whose fluidity, in time, becomes independent and uncontrolled by the project’s initiators.

We distinguish, in this project, three different shared creative processes — collective creation, distributed creation, and collaborative creation. We are referring specifically to creative processes and not to group organization, as we will explain further on.

3.1 Collective Creation

It is important to distinguish what we will be calling collective creation from the common use of the word collective, as referring to a group of people acting together in some way. What we aim to describe is a particular creative process that by no means undertakes all other different and meaningful aspects of collectivity. In fact an art collective does not necessarily have to use what we will be calling collective creation as a creative process. It can, and often does, use collaborative or distributed creativity. Our intent is to be able to refer to a creative process in which participants act as one creative entity.

The complete dissolution of one’s identity in a group is utopian; a co-creative process where everyone is an equal partner in the process [18] is very difficult to achieve in large and medium groups. Working as plural organism requires a high level of intimacy between co-creators. An equal partnership basis has more chance of success in a cellular structure, in which each of the participants relinquishes hers/his own authorial mark in favour of the group’s authorship [19].

This was the preferred process used by Meilo Minotaur and CapCat Ragu to build the Meta_Body avatars and virtual installations. This type of creative process requires complete openness to state your insecurities, fears, uncertainties and to speak your mind no matter what, knowing that the relationship won’t break when you disagree. A high level of artistic respect for each other is absolutely required, but not sufficient: one needs complete trust to blindly give up one’s creation to the other. It is a very intuitive process that relies on a very strong bond between creators.

Their work process is loosely organized. There is no established division of labour. Each begins to create an avatar and passes the material to the other, so she continues. Keeping this back and forth until both decide that the avatar is finished. The construction of an avatar in SL depends both on buildings within
the platform, and other creations developed in other software and then uploaded to the virtual world. Within the platform is easy to share objects and accumulate transformations, but many of the materials built outside the platform also circulate between each other before the upload.

After the avatars’ building is time for distribution and a new stage of shared creativity begins.

3.2 · Distributed Creation

Pierre Lévy distinguishes two major types of virtual worlds: the limited and edited ones (off-line), and those accessible via a network and infinitely open to interaction, transformation and connection with other virtual worlds (online) [20]. The distinction between online and offline that Lévy suggests (note that the author stresses that this is not an opposition) is fundamental to the kind of work that is proposed: flux, process, metamorphic, co-constructed works. Although it also exists offline, this sort of work is typical of cyberculture [20]. We therefore speak of works whose authorship is distributed. The term was coined by the digital art pioneer Roy Ascott in 1986, to describe the interactive and remote authoring project La Plissure du Texte: A Planetary Fairytale (LPDT), created in 1983.

For Axel Bruns, distributed creativity occurs in “projects which harness the creativity of a large range of participants to build on and extend an existing pool of artistic material” [21]. In this case, the set of avatars and all the artefacts related to them. He also developed the concept of produsage to acknowledge the new reality “emerging from the intersection of Web 2.0, user-generated content, and social media since the early years of the new millennia” [22]. He realized that the conventional sense of production, especially related to the industrial economy, no longer applied to “massively distributed collaborations […] constantly changing, permanently mutable bodies of work which are owned at once by everyone and no-one”[20] in which the participants easily shift from users to producers and vice versa, originating a hybrid role in between.

He defines produsage “as a mode of collaborative content creation which is led by users or at least crucially involves users as producers – where, in other words, the user acts as a hybrid user/producer, or produser, virtually throughout the production process” [6]. It is fundamental to be community-based, meaning a broad group with fluid-roles, not a team. Produsers can participate in different ways throughout an ongoing process, according to their personal skills, interests and knowledge, shifting from user to producer [6].

We built and distributed Meta_Body avatars for free, transformable, copyable and sharable to the SL community, which in that platform is called “full perm” (short for “full permissions”). We produced content that others used to produce new content that they shared with us, which we in turn used for the AMIW exhibition (in the case of virtual photography and machinima) or to redistribute in new virtual installations (in the case of the Meta_Body II avatars, prodused by the users). The term produsage can, therefore, be considered appropriate to describe this project’s methodology.

In AMIW, machinimas were exhibited and videos were captured in SL, where their creators used Meta_Body avatars (modified or not) as characters for their narratives. Virtual photography was also exhibited and this can take many forms: screen captures (post edited or not) from SL, where the residents use the avatars (modified or not) as models for their photographic artworks, or screen captures of very modified avatars, where the new derived avatar can also be considered the new artwork.

In Meta_Body II, having the first eighteen Meta_Body project

![Beneath the Stream by Deborah Lombardo AKA Harbor Galaxy, a virtual photography using an unmodified original Meta_Body avatar, River Avatar, as a model.](image-url)
avatars as a starting point, SL residents were invited to share their derived avatars using any one of the parts of the project Meta_Body avatars, parts built by themselves and/or parts built by other developers, since its license specifically permitted copying, redistribution and transformation. All avatars should be provided with full permissions, which means they are now being distributed copyable, shareable and open to transformation.

Some creators recombined parts of the first avatars, as was the case Kikas Babenco, with your avatar Sophia, which combined parts of at least five in the building of an entirely new character. Other combined these parts with their own creations. This was the case of the avatar designed by alpha.tribe, which combined alpha.tribe’s skin design with elements of the original avatars. However, these elements were so drastically modified that became almost unrecognizable, revealing the distinctive alpha.tribe’s authorial mark.

A particularly interesting case is that of the artist Veleda Lorakeet, who used solely the avatar concept, not using any parts of the original avatars, but only her own creations. Her avatar, Ragdoll, was conceptually based on one of the original avatars, Ragdoll—a rag doll, was turned into a wooden doll with similar characteristics.

3.3. Collaborative Creation
Collaboration, as Maria Lind states, has been a “buzz” word in the artworld since the 1990’s, and incorporates several methods of organization and a wide range of creative processes, it is an “open-ended concept” and “becomes an umbrella term for the diverse working methods that require more than one participant” [23]. Collective creation and distributed creation are creative processes that can be used in different forms of collaboration. When we refer to collaborative creation we are not addressing the very wide term “collaboration”, but trying to describe a particular way of creating together, that differs from the ones we previously characterized. In this process each author retains her authorial mark and one can roughly distinguish each author’s work, even though it can blend in, making it difficult to define a borderline between each other. This kind of creation often happens as a dialogue between authors, where each creation is a response to other creation.

Meilo Minotaur and CapCat Ragu sometimes use this creative process along with collective creation (even though they always co-sign everything), but this process is especially useful to describe how the duo worked with Takio Ra in building the Delicatessen sim for the distribution of derivative avatars in Meta_Body II.

Takio Ra is the creator of the sound one can hear at Delicatessen region, through all four stages. He was invited by Meilo Minotaur and CapCat Ragu to make a sound intervention in the virtual installation built by them. Even though his work didn’t alter anything built by the couple, as all modelations and visual aspects of the work remained untouched, it radically altered the perception of the space and became a fundamental part of the project’s conceptualization. The sounds used are also being distributed with full permissions, feeding the distributed creation branch.

4. Conclusions
The building and embodiment of an avatar in SL is usually a shared creative process. Each resident is “born” into the world with one of the default avatars provided by the platform. Those that choose to explore this place in the metaverse, begin to transform their avatars very early on, building something that in some way expresses their identity. Some choose to create a virtual representation of their physical bodies, or an improved version of it; others prefer an idealized body of eternal beauty and youth. Some try to maintain a stable image of themselves, a fixed iden-
tity; others are shape shifters, always tearing themselves apart and reassembling their bodies. However people choose to embody their avatar, they always have to start from something provided by the platform. They can change it and rebuild it according to the customization allowed, which is very broad on SL, permitting inclusively the upload of original content. This way each resident constructs their unique avatar, with what the platform offers by default, with materials built by herself and/or with materials designed and provided by other residents. Stereotypical or surreal, all SL avatars are the result of a creative process that connects them to other creators: skin, cloth, hair designers, etc. Even someone who can’t dominate any creative technology and builds her avatar only with materials designed by others needs a creative approach to choose and mix different materials in order to make her unique avatar.

On project Meta_Body we focused on this creative aspect of embodiment and in the metaphorical nature of the avatar, a body/language open to experimentation.

We provide eighteen avatars, which are not only offered, but also copiable, transformable and transferable, giving total freedom of use to producers. We use this term instead of public or audience, because this project promoted a creative and participatory relation with SL residents. As an artwork, Meta_Body can only be fully grasped in the embodiment and transformation of the avatars, turning the aesthetic experience of the work into a creative process.

The selection of works we exhibited in Austria intended to be as inclusive as possible and not based on personal “taste”. Instead, we aimed to depict the variety of sensibilities and cultures present in the art of the metaverse, and the multiple ways in which the original avatars were interpreted.

We went a step further on Meta_Body II, inviting new creators to make and share in the same way a new set of 26 avatars, derived from the first one, spawning new branches in this never ending creative flux.

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Meta_Body — A Project on Shared Avatar Creation

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Provas de Autenticidade em Autobiografias Visuais

Tales of Mere Existence de Lev Yilmaz

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Abstract
O presente artigo procura estabelecer que provas de autenticidade são dadas quando falamos de autobiografias visuais, em substituição do pacto autobiográfico (conceito introduzido por Phillipe Lejeune [1] em 1989 e que é operativo no caso das autobiografias escritas). Para ilustrar as hipóteses lançadas, é analisado o caso específico da série de objetos autobiográficos – tiras de banda desenhada, pequenos vídeos, pequenas animações – intitulada Tales of Mere Existence, da autoria de Lev Yilmaz [3]. Conclui-se que, em autobiografias visuais, existem convenções identificáveis que se repetem e que procuram estabelecer com o leitor/espetador/fruidor uma relação de autenticidade.

Keywords
Autobiografia visual, banda desenhada, animação, pacto autobiográfico, autenticidade autobiográfica, Tales of Mere Existence, Lev Yilmaz

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1. Introdução

O presente artigo começará por tentar definir o conceito de autobiografia, começando pela escrita e avançando para os casos que, por uma questão de simplificação, se denomina aqui como autobiografias visuais, apesar de incluírem as vertentes verbal e visual com responsabilidades semelhantes no que toca à construção de sentido. Tentar-se-á compreender em que consistem, que motivos as originam, e mecanismos as legitimam.

Por autobiografia entende-se, para o presente projeto, o construir de narrativas que tentam, de uma forma mais ou menos estruturada, transmitir experiências vividas pelo próprio autor ou, nas palavras de David Herman (que se baseia em Genette) [4], um caso especial de narração homodiegética (na qual o narrador e a personagem principal da história confluem numa só pessoa) – Philippe Lejeune [1] é mais específico e define a autobiografia como um caso de narração autodiegética (na qual autor, narrador e personagem são coincidentes.). Autobiografia, neste contexto, refere-se a uma narrativa de uma forma mais ou menos estruturada, transmitir experiências vividas pelo próprio autor, em estilo retrospetivo, mas também outras formas de registo autobiográfico, como o diário.

O objetivo de quem traça a própria biografia nem sempre é o mesmo: para uns, há uma necessidade de compreensão de acontecimentos, traumáticos ou não; para outros, trata-se de uma reflexão mais solta; nem todos os autores pretendem contar uma história - no entanto há sempre uma necessidade de registo autobiográfico, como o diário.

O esforço autobiográfico implica uma multiplicação de “eus”, ou uma divisão do autor em mais do que uma personagem, cada uma a encarnação de uma faceta: quem cria, quem conta, quem vive, são três dessas personagens [5]. A separação entre o sujeito da enunciação e o sujeito do enunciado decorre do próprio funcionamento dos géneros verbais e da figuração visual. A impossibilidade de coincidência entre o eu que escreve e o eu que é escrito ou entre o eu que desenha e o eu que é desenhado revela a que ponto a mediação da escrita e do desenho (graça) interferem no ato reflexivo (auto) de contar a própria vida (bio).

Existe alguma exigência, por parte dos leitores de uma autobiografia, de verdade comprovável na história contada [1]. Esta exigência parte de um pressuposto que nem sempre se verifica, e que é o de que o autor conta a verdade tal como esta ocorreu; a análise teórica tem revelado, no entanto, que a verdade é uma entidade moldável e subjetiva, e que, mais ainda, a memória não é precisa [1, 2]. A construção de uma narrativa completamente isenta de ficção é uma tarefa impossível. O grau de ficção numa autobiografia é, pois, muito variável, mas sempre presente, o que não invalida o valor que esta possa ter enquanto intenção de registo autobiográfico, tanto para os seus leitores como para o seu autor. Lejeune, muitas vezes citado em questões desta natureza, resolve a questão recorrendo ao nome próprio como sinal e assinatura do eu que é autor e que, ao afirmar-se como coincidente com o narrador e com a personagem, está a assumir o pacto com o leitor acima referido (página 14). Elisabeth El Refaie [6] vai mais longe e assume que, por vezes, este pacto será quebrado – mas rapidamente condena estes casos de transgressão do pacto autobiográfico a serem exceções que confirmam a regra.

Pode acrescentar-se mais um grau de complexidade a esta questão quando se introduz a possibilidade de vários autores – especificamente, um que escreve (ou conta) e um que desenha (ou mostra). Vários autores abordaram este problema: Refaie refere, por exemplo, Groensteen, que distingue entre quem escreve a história – recitant – e quem a desenha - monstrator. Mesmo quando o autor dos dois discursos (verbal e visual) é o mesmo, o processo e a abordagem de cada um pode diferir; a dissociação entre autor, narrador, personagem multiplica-se e amplifica-se pelos aspectos que compõem o resultado final.

O autor quer estabelecer-se, de forma credível, através do texto escrito, como coincidente com o narrador e com a personagem. Ao mesmo tempo pretende representar-se visualmente e manter o referido pacto autobiográfico com os leitores. As estratégias para o conseguir são muito variáveis; Lejeune debate, no caso da autobiografia escrita, que as opções para a utilização dos pronomes pessoais (eu, tu, ele) têm consequências para a forma como o texto é contextualizado (como é que a personalidade do autobi-
grafado é percebida pelo leitor). Quando consideramos também o lado visual de uma autobiografia verificamos que as opções de representação e, consequentemente, de análise, se multiplicaram. O autor pode, por exemplo, representar-se de uma forma mais ou menos semelhante a um realismo fotográfico (mas sempre codificado e simbólico: um estereótipo representativo) ou pode optar por uma conjunção de formas simbólicas; pode decidir agrupar muitas idades (e representações dessas idades) de si mesmo (ou mesma) ao longo de uma narrativa e assim criar uma personagem com múltiplas facetas; pode, de alguma forma não prevista, criar variações à forma como a representação de si mesmo(a) não coincide com a forma como o (ou a) vemos no momento presente, no local presente, na circunstância presente. Como é que o pacto autobiográfico é estabelecido quando tratamos de autobiografia visual?

O problema intensifica-se quando percebemos que o pronome pessoal eu, que faz a identificação entre narrador e personagem, funciona de uma forma diferente da representação visual do autor – que implica um distanciamento inevitável, uma objetificação do eu. Esta objetificação é fruto de uma análise muito interessante feita por Charles Hatfield [2], que pondera se a sujeição do eu à estereotipação não é uma forma de construção e identificação pessoal. Esta questão não será abordada na investigação presente por, necessariamente, obrigar a uma discussão demasiado vasta para os objetivos do presente artigo. De qualquer forma, não poderia deixar de ser referida pela sua importância teórica para o assunto estudado e porque reforça a constatação necessária de que a narrativa autobiográfica é sempre ficcional no seu núcleo – é uma ficção com referentes comprováveis na realidade que partilhamos como cultura.

Pode então ser interessante, para cada caso, tentar identificar as estratégias que conferem o deseado estatuto de autenticidade e que estabelecem com o leitor o pacto autobiográfico de Lejeune, ou um que opere de forma semelhante e inclua uma possibilidade para análise da faceta visual de algumas das produções autobiográficas.

Até este ponto, os que fruem uma autobiografia têm vindo a ser chamados leitores. No entanto, tal como não há nenhuma regra que imponha o formato verbal e escrito a esta forma narrativa, também a implicação de que será algo que se lê é limitadora. A autobiografia visual não é um fenômeno novo [8] nem é limitado ao livro: a autobiografia é um género estabelecido, por exemplo, em cinema - basta lembrarmo-nos, por exemplo, do caráter semi-autobiográfico que permeia algumas obras da nouvelle vague, entre as quais se encontram os filmes de Truffaut e a sua personagem Antoine Doinel, referido especialmente por Linda Haverty Rugg no seu artigo incluído na antologia de Cheney [13]. Um outro exemplo é a animação independente, que, especificamente, apresenta, muitas vezes, um cariz autobiográfico (como o ilustre Tale of Tales, de Yuriy Norshtein, ou Ask the Insects, de Steve Reinke); a possibilidade de contar histórias de uma forma mais flexível nos seus trâmites torna a animação uma via desejável para rever e reorganizar imagens do passado, da memória, numa narrativa autobiográfica.

Também as artes plásticas se têm preocupado com a ideia de memória, se não especificamente de autobiografia, e muitas vezes envolvem explorações que se podem interpretar como uma tentativa de compreender o que aconteceu - no passado próprio como no coletivo [8]. Ao invés de encontrarmos reproduções diretas (tanto quanto possível) dos acontecimentos, muitas vezes compreendemos uma alusão ao passado, que nem sempre nos é explicada ou tornada completamente clara; há uma vontade de tornar público o que é provado, mas esta é ultrapassada pela necessidade de incorporar e entender memórias por vezes traumáticas, por vezes enigmáticas, sempre obscuras.

Apesar do afirmado, poderá ser mais frutuosa uma análise baseada no corpo teórico desenvolvido em torno de bandas desenhadas autobiográficas, não só porque a obra analisada neste artigo é parcialmente banda desenhada, mas também porque, perante um aparente crescimento do número de bandas desenhadas que se descrevem como autobiográficas [6], este campo de investigação tem produzido desenvolvimentos recentes que interessa ter em conta.

2. Provas de autenticidade em autobiografias visuais
Banda-desenhada autobiográfica

Tanto a banda desenhada como a animação têm caraterísticas
próprias, que, obviamente, nem sempre coincidem. Sofrem ambas, historicamente, de algum desprestígio, tendo sido em determinados contextos sócio-históricos relegadas para o campo de entretenimento infantil, e ambas lutam, de certa forma, para se libertarem desta caraterização redutora e reclamarem campos diversos, num esforço de desenvolvimento e legitimação como práticas artísticas plenas. Para a investigação aqui apresentada importa reforçar que animação e banda desenhada são semelhantes, no que toca ao registo autobiográfico, quanto à forma como exploram através do desenho uma dimensão visual das memórias de quem conta. Este aspeto é importante para o caso aqui estudado uma vez que Tales of Mere Existence é uma obra que compreende banda desenhada e animação. Por este motivo, o enquadramento aqui apresentado referir-se-á a ambos os meios.

O número e formato das bandas desenhadas autobiográficas têm vindo a aumentar de forma notória, no esforço de reclamar para esta forma de expressão temas mais adultos e que escapem aos conteúdos do entretenimento popular e infantil. A banda desenhada é também uma forma atrativa de contar histórias, e de mostrar estas histórias. Permite um registo mais experimental e intimista, sendo muitas vezes criada sem o envolvimento de uma equipa de trabalho, pelo menos à partida; pelo que se presta de forma bastante directa ao recontar e ao registar de memórias. Importa perceber porque é que a banda desenhada se revelou um suporte tão apetecível para o registo autobiográfico, especificamente o registo de acontecimentos traumáticos.

Um dos autores que aborda este assunto é Stephen Tabachnick, na sua análise a Epileptic, de David Beauchard [9].

Para Tabachnick a autobiografia em banda desenhada recorre ao que se vê, “visualiza o invisível”. Epileptic é o reconto da relação entre dois irmãos, em que um deles, não o autor, sofre de epilepsy. Beauchard vai construindo a sua relação com a doença do irmão através de estratagemas que o ajudam a crescer e a adaptar-se (é uma autobiografia de descoberta). Muitas vezes representa não só o que é visível no mundo em que fisicamente habitamos mas também ideias, amigos imaginários, entes fantásticos, que respondem às suas preocupações e sugerem ativamente formas de superar problemas reais. Fazendo visível o que não o seria, Beauchard faz algo que seria impossível numa autobiografia que recorresse apenas à palavra: seguramente, ao ler os diálogos entre David e o homem da barba comprida, o leitor presumiria que se passavam na mente do autor e não fora dela. Dota assim a história de um caráter mais intrigante e inesperado. Embora, na tentativa de estabelecer uma comparação entre uma autobiografia escrita e uma desenhada, a utilização deste exemplo seja, na verdade, uma estratégia pouco subtil, é um dos casos em que mais claramente se mostra como o facto de a obra integrar uma vertente visual altera, por completo, a relação que com ela se estabelece, em comparação com uma hipotética obra apenas textual.

É importante referir um outro ponto de vista que reforça a ideia de que o medium se presta à tarefa de registar memórias e relatos de forma quase intrínseca. No artigo em que analisa a obra de Justin Green, Binky Brown meets the Virgin Mary [10], Josef Witek apesenta diversos argumentos em favor desta hipótese. A possibilidade de navegar fluidamente o espaço entre a representação verosímil e a representação de aspetos subjetivos através das vinhetas favorece, para este autor, a utilização de bandas desenhadas para a autobiografia ou, de qualquer forma, a apresentação de uma personagem de uma forma mais intimista.

Pode-se então assumir que a autobiografia cujo suporte é o da banda desenhada opera de forma diversa à autobiografia escrita porque, de forma bastante óbvia, pode tornar visíveis as memórias e os pensamentos do autor; por seu turno, dentro do grupo das autobiografias com uma dimensão visual, a banda desenhada difere do cinema porque permite aberturas para interpretações diversas decorrentes dos hiatos entre as vinhetas, dado o caráter necessariamente discreto da forma como apresenta as imagens, por oposição à contínua apreensão da atenção do espetador na sala de cinema. Levanta-se a questão: a animação, tal como a banda desenhada, permite a visualização de elementos fantásticos; permite uma exploração livre de conceitos que poderiam colocar dificuldades ao cinema de imagem real; mas, tal como as outras formas de cinema, não permite espaços de ligação entre imagens durante a narração da história.

Em The Gutter Effect em Eve Kosofsky Sedgwick’s A Dialogue on Love, Carolyn Williams [11] aborda precisamente o efeito que as calhas entre as vinhetas criam na forma como uma história é apresentada em banda desenhada. Embora a obra analisada, A
Dialogue on Love of Eve K. Sedgwick, seja constituída apenas por texto escrito, o desenho tipográfico e a organização da mancha de texto, que preveem a utilização de espaços em branco, simulam o efeito que as elipses produzam numa banda desenhada. A obra conta a luta de uma mulher com uma doença terminal; em porções que seriam demasiado emotivas, a autora organiza a mancha de texto de forma criativa, deixando espaços em branco, que carregam a carga emotiva de forma não descrita e, por isso, mais próxima dos leitores, que a fazem sua. Williams refere ainda que a grande impossibilidade em autobiografia é o relato da morte do autobiografado - embora Sedgwick torne cada vez mais rarefeito o seu texto, sugerindo um progressivo apagar e, finalmente, o seu desaparecimento. As calhas entre vinhetas na banda desenhada são, assim, vistas como parte integral do suporte, e não podem ser construídas como uma característica desprezável; a reafirmação do seu poder em relação ao um meio contínuo como o ilme é pertinente.

Por seu turno, a possibilidade de desenhar elementos de outra forma invisíveis, que demarca a banda desenhada da fotografia e do cinema de imagem real, é algo que a banda desenhada e a animação têm vindo a perder exclusividade face às tecnologias que permitem criar efeitos cada vez mais inauditos. Se o desenho e a expressão de cada autor não pode ser vista como parte integral do suporte, e não podem ser construídas como uma característica desprezável; a reafirmação do seu poder em relação ao um meio contínuo como o filme é pertinente.

Yilmaz consegue um registo autobiográfico gravando-se (presume-se o se) enquanto desenha os acontecimentos que pretende representar, ao mesmo tempo que vai narrando e tecendo comentários em voz of. Tales of Mere Existence é assim, aparentemente, apenas uma gravação vídeo do momento em que Yilmaz desenha o diário gráfico com a mesma designação; esta correspondência entre o vídeo e a banda desenhada é falsa, no entanto, uma vez que o que Yilmaz desenha para a câmara não é identificável com as composições mais cuidadas que apresenta como banda desenhada. A forma como vai desenhando em vídeo também não conduz à construção de painéis, mas acompanhando a narração áudio de forma orgânica. Assim, embora os desenhos não se movam, a forma como o vídeo é estruturado leva-nos a considerar este trabalho uma forma de animação.

Yilmaz dota o seu diário animado de uma voz extremamente crítica e pessimista, comentando principalmente os falhanços e estranhezas do seu comportamento social. Fará parte do que foi identificado por Beaty como a segunda vaga de autobiografia gráfica [14], caracterizada pela auto-abjeção do sujeito, pela tentativa de apresentar a personagem (autor) sob a pior luz possível, mostrando aspetos da vida privada como a adição a pornografia, a masturbação crónica e a falta de relações sociais. Yilmaz não é tão cándido (ou será, porventura, mais cándido e menos obstinado em dar uma certa imagem de si próprio) mas aborda, de forma negativa, a sua inabilidade para se relacionar de forma significativa com as suas potenciais namoradas e transmite um sentimento
geral de pouca estima por si próprio. Fá-lo abstratizando as histórias, isto é: não reconta os acontecimentos como parte do passado da sua personagem mas faz listas descritivas ou dá receitas para relacionamentos falhados (How you may fall for a girl on Facebook, por exemplo), sempre personificados na sua personagem de cabelos estranhos, redondos e pontiagudos simultaneamente.

Não se prendendo a definições constrangidas por técnicas, Tales of Mere Existence adota a forma que mais se coaduna à narração das historietas que vai contando, numa exploração dos limites da animação, no espírito apontado por Paul Wells e John Hardstaff [15] como desejável para um repensar crítico da animação e da cultura visual que nos rodeia. Se bem que a técnica de Yilmaz não é original, no sentido em que não a vemos em Tales of Mere Existence pela primeira vez, a despreocupação pela possível categorização do seu trabalho como uma forma ou outra é refrescante e revela que o que interessa ao autor é a exploração aberta do potencial de uma técnica específica para transmissão das mensagens e não a inserção num grupo específico.

A forma como são construídos os vídeos colmata até certo ponto a inexistência de calhas entre vinhetas que eliciem reflexão por parte dos espetadores: enquanto vemos Yilmaz desenhar, refletimos sobre o que estamos a ver. Os espaços entre imagens paradas são criados por estes momentos em que esperamos que o desenho se conclua.

Refaie, apesar de identificar algumas características que podem ser (e muitas vezes são) utilizadas para conferir autenticidade a um dado documento autobiográfico visual, escusa-se a fornecer elementos distintivos definitivos, argumentando que existem casos tão diversos que um esforço desta natureza seria vão. Mesmo assim vale a pena enumerar os marcadores que a autora refere: a semelhança física entre autor e personagem; o estilo gráfico (um vestígio físico da mão do autor); a inclusão de documentos como fotografias e suportes provenientes das atividades do autor (páginas de agendas, por exemplo) [7].

Importa ainda referir que, dado o caráter verbal e visual das obras, a vertente verbal continua a ser sujeita às regras que Lejeune identificou; e que esta vertente reforça quaisquer estratégias adotadas quanto ao lado visual da autobiografia. Os dois campos não se distinguem na construção de sentido: um reforça e valida o outro numa relação simbiótica.

Conseguem-se identificar algumas das estratégias de autenticação indicadas por Refaie em Tales of Mere Existence. Yilmaz desenha uma personagem que, embora simplificada, é semelhante a si mesmo na aparência física. Para reforçar esta convicção, existem vídeos e fotografias do autor no sítio da Internet. O estilo gráfico é relativamente simplista, na tentativa de transmitir uma certa ingenuidade.

Mais importante, no entanto, é a forma como registra o momento em que desenha – ou uma mão desenha; assumimos imediatamente que é a do autor das histórias. Existe um certo grau de pacto autobiográfico neste processo. Yilmaz assume-se como o autor das histórias. Vemos alguém que desenha – mas não a cara; só uma mão. Confiamos, como espetadores, que é a mão de Yilmaz.

O ato de documentar por vídeo o ato de desenhar e, ao mesmo tempo, usar como conteúdo narrativo referências auto-irónicas à vida do autor é o que estabelece a autenticidade de Tales of Mere Existence como autobiografia.

O facto de nos serem apresentadas as tiras de banda desenhada, que não são fruto direto destes desenhos gravados em vídeo, mas cuja ficção implica que serão, acrescenta peso a esta testemunha: a câmara de vídeo. A câmara de vídeo (e a fotográfica) tem crescido para além deste papel, muito, muito discutido e contestado, de testemunha imparcial; não é possível, com uma réstia de investigação credível, assumí-la como tal [16]. Percebe-se assim que a veracidade de Tales of Mere Existence é comprovada, paradoxalmente, por diversas ficções menores, facilmente desacreditáveis, em que, como leitores, acreditamos mesmo assim:

- a mão do autor como prova: não existe prova de que seja, realmente, a mão do autor, mas assim o cremos.
- o resultado dos desenhos é nos fornecido – mas não na forma das tiras da banda desenhada: vemos os desenhos nos vídeos que registam a sua criação.
- o registo vídeo como testemunha: não haverá muito a acrescentar ao que inúmeros teóricos da fotografía e da imagem terão já dito; a ideia da fotografía como verdade indiscutível e imparcial é uma das mais contestadas e discutidas da história da
Provas de Autenticidade em Autobiografias Visuais: Tales of Mere Existence de Lev Yilmaz
Sofia Figueiredo

1. Introdução

Teoria da Imagem.

A conjunção destas três ficções constroem a impressão de verdade e de autenticidade em Tales of Mere Existence. Nunca Lev Yilmaz as desacredita ou reforça; como leitores, acreditamos se quisermos. O pacto autobiográfico é assim estabelecido.

Observando mais de perto um dos elementos desta série poderemos comprovar a análise efetuada. O vídeo escolhido é How to Cope With Depression [17]. O autor não nos dá uma data de criação, mas o vídeo foi disponibilizado na rede Youtube em 2007.

O vídeo é sobre comentários e reações de variadas pessoas ao estado de depressão de Yilmaz. Vamos sendo apresentados às categorias que Yilmaz cria para as pessoas que inclui no vídeo através de separadores constituídos por texto que é inalizado, ou riscado, ou sublinhado – uma colega de trabalho; alguém que estava numa festa; os mais velhos, na figura de um professor; a irmã; um antigo colega da escola.

A narração, feita (presumivelmente) por Yilmaz, é lenta e monótona: parece existir um esforço para narrar a história, irônica no seu conteúdo, com o mínimo de indicadores dessa mesma ironia no tom de voz. O narrador fala na primeira pessoa, e o vídeo é assinado por Yilmaz, satisfazendo as formalidades do pacto autobiográfico de Lejeune no que toca a componente verbal do objeto. O vídeo não tem uma página de banda desenhada direta-

mente correspondente, mas é possível comparar o estilo gráfico, o conteúdo e tom narrativo e a falta de inflexão da vertente verbal (através da forma uniforme como o lettering é desenhado) por exemplo em 3.A.M., uma página de banda desenhada disponibilizada no mesmo sítio da Internet [18]. Também o tema é semelhante – trata-se, desta vez, de uma representação dos pensamentos pessimistas de Yilmaz quando acorda às três horas da manhã para ir ao W.C. É fácil estabelecer a relação entre os dois trabalhos e imaginar que, por exemplo, o vídeo regista a criação de uma outra obra da mesma série.

No sítio da Internet é ainda possível confirmar, através da apresentação de fotografias de Yilmaz, que a sua representação desenhada é parecida com o espécime vivo. Observamos assim a presença dos três marcadores previamente identificados – o registo da mão enquanto desenha, a ingenuidade dos próprios desenhos, e a semelhança entre a personagem desenhada e o autor. Confirmados estes elementos, é agora possível e desejável chegar a algumas conclusões.

3. Conclusões

Podemos concluir que, tal como indicado por Refaie, é possível identificar em Tales of Mere Existence estratégias comumente empregues por autores de autobiografias com uma componente visual, especificamente sob a forma de bandas desenhadas, para construir uma teia de relações com os leitores que não poderia existir se se tratasse de uma obra apenas textual. Tal como o pacto autobiográfico, identificado por Lejeune, estas estratégias são utilizadas com o intuito de estabelecer uma veracidade mais ou menos comprovável. Por vezes, no entanto, a questão da autenticidade de uma obra autobiográfica torna-se complexa: por exemplo, quando falamos numa equipa de autores, o autobiografado é também biografado e interpretado pelos seus colegas de equipa; a ideia de autobiografia dilui-se nestes casos.

A análise a Tales of Mere Existence procura encontrar os marcadores identificados por Refaie e perceber até que ponto, como leitores, nos apoiamos neles, e o sentido da obra é construído em torno dos mesmos. Não haveria uma ligação tão forte entre leitores/espetadores e autor/personagem sem a construção de uma base de veracidade das histórias contadas. Paradoxalmente, no
entanto, esta base é construída pela introdução de provas que são, no seu fundo, ficções.

É assim possível concluir que, neste caso específico, a identificação de Tales of Mere Existence como biograficamente autêntica (salvaguardando que, inevitavelmente, esta autenticidade é construída) é feita com base em convenções que não derivam de provas nem vestígios incontornáveis, que são construídas com o único objetivo de criar uma ligação entre autor e leitores/espectadores e que convergem numa variação do pacto autobiográfico identificado por Lejeune nas autobiografias textuais. Seria interessante estender esta análise a outras obras autobiográficas que incluam uma faceta visual, no sentido de perceber se estes marcadores se manifestam da mesma forma ou se este foi um caso feliz de encontro entre a teoria e a concretização prática.

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Ensinar desenho
Uma experiência pedagógica interdisciplinar num Curso de Design Gráfico

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Abstract
A função do desenho na metodologia projectual do designer tem merecido o interesse de vários autores. Nessas abordagens está presente a afirmação de que o desenho é essencial no processo de investigação do design para o registo de diversas variantes e de várias soluções ao longo da metodologia projectual (Cross, 2007).

As profundas alterações da natureza do Design provocadas pelo contexto histórico actual (Norman, 2011), justificam a pertinência de uma reflexão alargada em torno do papel do desenho nos cursos de design, adaptado a esta nova realidade. Este é um desafio colocado hoje às instituições de ensino e seus intervenientes, na organização de estruturas curriculares e métodos pedagógicos. Conceitos como colaboração ou design multidisciplinar, entre outros, têm sido debatidos como estratégias para o ensino do design (Heller and Talarico, 2011, pp. 82-85).

Neste contexto, e enquanto docentes nas áreas do Desenho e do Design, importa-nos abordar as seguintes questões:
- de que forma é possível enquadrar métodos do desenho ao ensino do design actual?
- de que forma poderá o Desenho ser pensado enquanto prática interdisciplinar?
- que contributos podem essas práticas trazer para o processo de ensino/aprendizagem?

Com base nestas preocupações, desenvolveu-se um projecto interdisciplinar entre as unidades curriculares de Desenho e de Estética e Teoria do Design no Curso de Design Gráfico na Instituição onde leccionamos. Este artigo apresentaremos os objectivos e o processo desenvolvido, assim como a análise e conclusões desta experiência pedagógica.

Keywords
Ensino do Desenho; Design; Práticas interdisciplinares

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**Introdução**

A actividade docente que desempenhamos motivou-nos para a investigação que deu origem a este artigo: Ensinar desenho: uma experiência pedagógica interdisciplinar num Curso de Design Gráfico.

Sendo o Desenho e o Design as áreas de estudo em que nos inserimos, o trabalho aqui apresentado resulta da nossa prática pedagógica nesses dois domínios.

Numa primeira etapa, analisaremos perspectivas de diversos autores sobre a problemática do ensino do Desenho na actualidade e o sentido de uma prática metodológica interdisciplinar no âmbito do Design Gráfico. Numa segunda etapa, apresentaremos a experiência pedagógica desenvolvida no âmbito das unidades curriculares de Desenho e de Estética e Teoria do Design, com alunos do primeiro ano do Curso de Design Gráfico.

O Design, enquanto disciplina, alargou a sua área de actuação diversificando-se em novos campos como o Design de Experiência ou o Design de Serviço, alterando quer o papel do designer gráfico, quer as competências a adquirir para o desempenho da profissão (Ciampa-Brewer, 2010).

O enquadramento das competências necessárias para fazer face à instabilidade do mercado de trabalho, tem sido uma questão premente para diversos autores, numa reflexão que concerne à definição de estruturas curriculares para o ensino do design. Para Donald Norman torna-se necessária uma revisão curricular ao nível das apetências tradicionais da manualidade, como o “sketching, forming and molding”, devendo estas ser complementadas ou substituídas por competências mais ajustadas às exigências do mercado actual, presentes, por exemplo, no domínio, da “programação” ou da “interacção” (2010, p. 2).

Qualquer alteração na estrutura curricular dos cursos de Design deverá, certamente, ter em conta uma amplitude de factores, mas é certo que já se revela visível uma preocupação sobre o ‘como’ e o ‘que’ ensinar quer em Desenho, quer noutras unidades curriculares.

**Ensinar desenho num Curso de Design**

Diversos autores têm recorrentemente afirmado a importância do desenho no processo de investigação do design, como tem sido o caso de Nigel Cross (2007). Refere o autor que o exercício do “sketching” confere uma ligação imediata e um raciocínio de trabalho fundamental para a análise do problema. Esta importância do projectar com a mão para o desenvolvimento do processo criativo é também referida pelo designer espanhol André Ricard (2008), onde a mão solta que desenha promove a “relação motriz-visual instantânea” (p. 67). Pela sua experiência, “la mente y la mano, la idea y el gesto, han de trabajar juntas a la hora de plantar soluciones. La mente las visiona y la mano debe saber reten-derlas antes de que se desvaneczan. Es así, mediante este ir y venir constante entre mente y mano, como se desarrolla el proceso creativo.” (ibidem). O autor identifica, como aspecto fundamental para um designer, a suficiente agilidade e destreza que manuseia qualquer ferramenta que eleja para desenvolver o seu trabalho. Na fase da concepção inicial - em que se esboçam ideias soltas e imediatas – entende que a ferramenta não se deve tornar num obstáculo, pois só dessa forma a mão conseguirá acompanhar os impulsos criativos que a mente procura expressar.

Todavia, a relevância da unidade curricular de desenho nas escolas de Design tem sofrido alterações pela transformação do princípio “learning by doing” para o modelo “planning and designing” (Olpe, 2006, p. 243), o que, aparentemente parece relegar para segundo plano o desenho manual (p. 242). Se esta abordagem pode acarretar diversos problemas, é de acrescentar ainda a posição subordinada do desenho e isolada das outras disciplinas (Cué, 2006, p. 6). Patricia Cué afirma que, na sua maior parte, o estudo do desenho não é sobre o desenho “per se”, mas sobre qualidade estética e a melhoria de capacidades para uma representação “‘beautiful’ and ‘correct’” da realidade (ibidem).

Jamie Hobson (1997) questiona igualmente a excessiva valorização dada a certos conteúdos do desenho, nomeadamente a capacidade de execução técnica, de representação realista ou da linguagem expressiva. Segundo o autor, confere-se uma maior relevância a conteúdos estéticos e estilísticos, em detrimento da exploração das capacidades analíticas e de pensamento que o desenho proporciona no processo de design. Considerando, assim, o uso e função do desenho nesta área, o autor propõe um ensino do desenho que seja adaptado aos meios actuais da prática do design: “We must consider visualising skills that will provide
‘non-drawers’ with means by which they can give dimension to their concepts through simplification and visual shorthand” (Hobson, 1997).

Neste seguimento, sugere ainda um alargamento a métodos do desenho aplicados noutras áreas, que desempenham funções específicas, e que poderão ser úteis para o processo de design: “(...) 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” (ibidem).

Se a importância que o desenho continua a revelar no processo de design demonstra a sua pertinência como disciplina (no âmbito curricular dos cursos nessa área), seja para promover o entendimento da “forma, proporção e composição” (Cué, 2006, p. 7), seja para o desenvolvimento da capacidade de “formular uma ideia pelo esquisso, de criar e transformar imagens” (ibidem); as propostas curriculares na prática parecem escapar a esse tipo de desenho essencial no design.

Como uma alternativa ao modo tradicional de ensinar o desenho na área de Design, importa referir a investigação de Mike Bradshaw, iniciada em 1999, no London College of Printing (London Institute). Tendo presente a importância do exercício do desenho para o Designer Gráfico, a investigação propunha repensar estratégias de trabalho, quer para o ensino do desenho, quer para uma efectiva aprendizagem (Bradshaw, 1999). Nesse sentido propôs pensar o desenho a partir do conceito de “visual thinking” – “process of taking visual conception to physical output and its ‘interpretation’ through drawing” (ibidem), considerando que essa abordagem ajudou os alunos a entender melhor o processo de design e outras possibilidades de concepção, análise e interpretação do desenho.

Estas preocupações aqui enunciadas serviram-nos de ponto de partida para o desenvolvimento deste projecto, acrescentando que, sentimos como necessidade a articulação de uma proposta interdisciplinar que pudesse promover uma atitude colaborativa fundamental no ensino. Para tal, investigou-se a importância da interdisciplinaridade para outros autores, quer na área do design, quer enquanto método pedagógico.

**A interdisciplinaridade no Design**

Conceitos como colaboração ou design multidisciplinar, entre outros, têm sido frequentemente debatidos como estratégias para o ensino do design (Heller and Talarico, 2011, pp. 82-85), mas nem sempre incluídas efectivamente no processo de ensino do design.

Meredith Davis, numa apresentação que fez na AIGA em 2008, refere existir uma tendência para ver os currículos como uma coleção de categorias de conteúdos e de definir os cursos pelo produto que nele se faz ou pela técnica empregue, como por exemplo cursos de Motion graphics, Web design ou Photoshop, não se desenvolvendo a consciência dos estudantes para transcenderem essas categorias, através da crítica ou da resolução de problemas, ou até pela intenção de pensar o design como uma mediação (Davis, 2008, p. 7).

Para a reformulação do currículo no ensino do design, Meredith aponta a pertinência actual de se pensar o design a partir da interpretação de “sistema” de Christopher Jones: “(...) is all the communicative forms and relationships within culture, which in turn, interact with other physical, technological, cultural, social, and economic systems.” (ídem, p. 11), ou seja, pensar as formas comunicativas – o desenho, a cor, a tipografia, a textura ou o formato – num sistema complexo que depende da relação/interacção de diversas variáveis.

Uma outra questão que mereceu a atenção de Meredith foram as prioridades do ensino do Design que exaltam os seguintes aspectos: “Individual performance and control of outcomes (...)” (p. 5). Perante esta situação, a autora analisa que as escolas pouco têm feito para ensinar que o designer não é “(...) the arbiter of meaning, value, and good form.” (p. 5). Se o ensino do design gráfico continuar a ser baseado nestes aspectos, então, argumenta, o currículo não está de acordo com uma das tendências do design anunciadas pelo estudo Visionary Design Council1. Este estudo que procurou prever as principais tendências do designer de 2015, aponta como necessário “Thinking about the people for whom we design as participants in the design process” (p. 5). Esta ideia está em consonância com a fundamentação da importância de se

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1. Citação de Meredith Davis relativamente à teoria de Christopher Jones desenvolvida no livro Design Methods: Seeds of Human Futures, publicado pela primeira vez nos anos 70.
pensar em sistema, como acima referido, ou de desenvolver uma espécie de “visual intelligence” (Moholy-Nagy, 1969), que Findeli reforça (2001, p. 10) como sendo a característica-chave para a adaptação à realidade dinâmica em que vivemos e à necessidade de lidar com relações, que pela sua natureza são invisíveis.

Em contraponto a esta prática isolada e autoritária, Meredith refere como exemplar um projecto desenvolvido com os alunos do 2.º ano de Design Gráfico do Estado da Carolina do Norte3 que teve como foco principal “people, settings and scenarios” (Davis, 2008, p. 5). Neste projecto não foi solicitado ao aluno a realização do objecto em si, ou seja, ensinar como fazer um mapa, um cartaz ou um filme, como recipientes arbitrários nos quais os designers derramam conteúdos arbitrários - método frequente no ensino tradicional do design. Pelo contrário, o objectivo da proposta/ enunciado fornecido pelos professores foi, segundo Meredith, primeiramente para ensinar as relações possíveis entre certos tipos de informação e estratégias de representações particulares (idem, p. 6).

Outros autores têm insistido na pertinência das articulações curricular e cooperação entre diferentes áreas de conhecimento para resultados com mais sucesso. Sublinhamos o caso de Donald Norman, com o seu artigo “Design Education: Brilliance Without Substance” (2011) onde aponta e insiste na necessidade de se actualizarem as bases da educação em design através de um conhecimento integrado de outras áreas; ou da autora Sharon Poggenpohl que no livro “Design Integrations” (2009) fundamenta a urgência de um ensino do design que reconheça a viragem do quotidiano dos alunos, é uma peça versátil quanto à sua variadíssima gama (forma, cor, tamanhos, etc.). Por outro lado, é aplicada em situações concretas e com funções específicas, sendo ainda possível estudá-la directamente em contextos profissionais.

Objectivos

Um dos principais propósitos desta experiência pedagógica foi o de proporcionar aos alunos o estudo de determinados problemas que, muito embora tivessem uma abordagem específica em cada unidade curricular, foram pensados e analisados de modo articulado, promovendo-se a ‘transferência’ de conhecimentos obtidos numa etapa do estudo para a resolução de problemas equacionados noutra disciplina.

O primeiro desafio colocado aos alunos foi o de analisarem a peça como um objecto de Design, sendo para tal necessário estudá-la nos seguintes parâmetros: história; simbologia; evolução; forma; materiais; textura; estrutura; proporções e ergonomia.

Na unidade curricular de Estética e Teoria do Design I, tendo em conta que se iniciavam os alunos na área do Design, começou-se por perceber e tentar definir o que é o design de uma forma ampla sem a preocupação de confinar a reflexão apenas ao

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3. Projecto desenvolvido na responsabilidade do Director do departamento Santiago Piedra e do assistente Alberto Rigau.

universo gráfico. No âmbito do conteúdo: O que é o design? Quem é o designer?, a tesoura foi um elemento de encontro recorrente como forma de consolidação da teoria (das aulas e expositivas). Nesta etapa percorreram-se os seguintes pontos:

- Reflexão sobre a abrangência da área do Design;
- Identificação da presença do design em objectos e serviços;
- Análise crítica quanto ao uso menos correcto do conceito Design;
- Análise dos aspectos a articular pelo designer: a forma, a funcionalidade, o material, a estética; a simbologia;
- História e evolução dos objectos (a tesoura do passado, do quotidiano e do futuro e em diversas culturas);
- Análise da relação ergonómica da mão com a tesoura durante o uso;
- O ‘utilizador’ e a relação que estabelece com os objectos (operativa, emotiva).

Uma das estratégias utilizadas nessa unidade curricular para a realização das etapas definidas foi o contacto directo com utilizadores profissionais, conhecedores profundos do seu objecto de trabalho (cabeleireiros, costureiras, alfaiates, jardineiros, enfermeiros...), através da entrevista.

Já na disciplina de Desenho a peça foi estudada ao nível da forma, escala, estrutura e proporções – desenvolvendo, desse modo, a capacidade de observação, análise e de síntese. Como estratégia de trabalho os alunos desenvolveram o desenho diagramático medido utilizando múltiplas tesouras, com diferentes formas, cores e texturas. Numa segunda etapa foi proposta a exploração de uma ‘estranha’ e ‘nova relação’ do objecto com a mão, tendo como referência a ideia “garfos-mãos” de Munari (1981, p. 330) sendo, nesse caso, o desenho aplicado para a procura dessas soluções. Através do esquisso, os alunos exploraram essas novas formas de relação da mão com a tesoura, atribuindo ao objecto posições associadas a outras peças e características de outro(s) objecto(s). Permitiu-se, deste modo, um exercício de investigação que simultaneamente permitiu explorar a capacidade experimental e criativa pelo desenho.

**Resultados**

A experiência foi posteriormente consolidada pela análise mais racional e objectiva em ambas as unidades curriculares, através de exercícios de observação, análise e representação.

Para dar resposta ao enunciado em Estética e Teoria do Design, o envolvimento do aluno com o ‘utilizador’ da tesoura, proporcionou a vivência de uma experiência que lhe permitiu apreender a importância do que se debateu em aula e desencadear a presença do design no objecto. O utilizador ocupou o papel de ‘ensinar’ o lado funcional do seu objecto de trabalho e revelar a ligação emocional que o mesmo objecto pode ter.

Consideramos, assim, que este projecto interdisciplinar permitiu aos alunos explorarem conteúdos do desenho – quer ao nível da observação/representação, quer ao nível de uma outra etapa de exploração criativa, partindo para o problema com um outro olhar ‘mais instruído’ sobre as qualidades da tesoura, tais como: a sua forma, o seu peso, a sua textura, o seu material, a sua simbologia e as suas possibilidades comunicativas.

Como reflexão final, entendemos que esta primeira abordagem interdisciplinar irá servir-nos como estrutura para o seu desenvolvimento nos próximos anos, já que pretendemos integrar:

- outro tipo de objectos que, da mesma forma, possibilitem a sua exploração através de vários aspectos;
- a inclusão de outras unidades curriculares no projecto;
- a participação dos alunos do curso de Design Industrial.

Ainda que no final do processo tenha sido recolhido o feedback dos alunos em relação ao projecto em curso, pretende-se elaborar futuramente um questionário de forma a permitir aos alunos integrarem as suas opiniões e ambições no propósito deste projecto.

Foi, no entanto, possível, já este ano, percecionar o interesse dos alunos pela interacção com outras pessoas, notando que, embora os próprios utilizadores não soubessem identificar ‘académicamente’ o design na tesoura, souberam dar o seu contributo de sabedoria prática, focando aspectos como a performance, conforto e simbolismo presente na sua relação diária com o objecto.

Sentiram também como positiva a presença do mesmo objecto de estudo nas duas unidades curriculares, já que desse modo puderam estudar os problemas propostos com uma visão mais ampla.
e profunda do tema, o que terá sido pertinente para a investigação desenvolvida e para responder aos objectivos lançados com este projecto.

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Estudos de Expressões Faciais para Animação 3D

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Abstract
A animação facial 3D é um processo minucioso que requer especial atenção e dedicação por parte de todos os envolvidos. No caso de personagens humanoides, todos os comportamentos assemelham-se aos humanos incluindo a face, logo, o estudo de expressões faciais humanas, torna-se um ponto de partida indispensável. A animação 2D, enquanto antecessora da animação 3D, merece igual atenção para perceber se transitaram, se foram adicionados ou completamente remodelados os princípios de animação de uma linguagem para a outra. O presente artigo visa expor áreas de estudo, assim como temas, conceitos e metodologias associadas para presentes ou futuros investigadores de expressões faciais animadas.

Keywords
Expressão; Facial; Animação; Investigação.

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1. Introdução

A comunicação humana tem como base dois fatores essenciais, nomeadamente os índices e os sinais. Índices correspondem a informação comunicada de forma involuntária, ou seja, sem intenção prévia de comunicar, por parte do emissor, e sinais correspondem precisamente ao oposto, “havendo (...) a intenção ou o objetivo de que essa informação atinja um ou mais recetores, direta ou indiretamente, de forma imediata ou mediatizada” (p. 16) [23].

Sinais são constituídos por signos e símbolos. Signos são “instrumentos de comunicação e representação, na medida em que, com eles, configuramos linguisticamente a realidade e distinguimos os objetos entre si” (Saussure cit in [22], p. 23). Dividem-se em signos verbais (orais e escritos) e não-verbais. Os primeiros são constituídos por três elementos, nomeadamente “o referente (a coisa em si), o significante (a imagem acústica ou visual) e o significado (o conceito, ou seja, o entendimento que se faz)” (pág. 16) [23]. Por outro lado, os signos não-verbais constam em sinais de comunicação sem recurso à palavra, como por exemplo, através de cores, desenhos, sons, ilustrações, fotografias, etc. Fernando Nogueira Dias [23] refere que a diferença entre signos e símbolos rege-se, basicamente, pela elevada dependência de normas sociais e culturais, por parte dos signos, para existir uma analogia correta entre significado e significante, ao invés dos símbolos onde existe uma perceção imediata a nível global. O autor destaca ainda que a comunicação não-verbal pode ser “enquadrada igualmente em comportamentos simbólicos” (p. 17) [23].

O emissor, com intenção de comunicar, terá de optar por um código percetível ao recetor [1] [24]. Um código é “um sistema de significados comum aos membros de uma cultura ou subcultura” (p. 357) [1] e:

“(...) incorpora signos, mas também regras ou convenções que determinam como e em que contextos estes signos são usados e como podem ser combinados de maneira a formar mensagens mais complexas. A linguagem verbal (nas suas múltiplas vertentes linguísticas), o morse, os semiáforos, a linguagem gestual dos surdos-mudos, as expressões faciais, o braile... Todos constituem exemplos (...) de códigos” (p. 357) [1].

Entende-se, então, as expressões faciais como um exemplo de código que incorpora signos ou símbolos não-verbais e que, adicionalmente, comunica “informação importante tal como sexo, idade, etnia, personalidade e outras características” (p. 3443) [2]. No entanto, diferentes características transparecem via diferentes signos. Ekman e Friesen [3] dividem os mesmos em três categorias: Estáticos (características permanentes: pigmentação da pele, forma da cara, estrutura óssea, cartilagem, depósitos de gordura, tamanho, forma e localização das sobrancelhas, olhos, nariz e boca), lentos (características graduais: rugas, tonificação muscular, textura e coloração da pele) e rápidos (características temporárias: deslocações das sobrancelhas, olhos, nariz, boca).

Neste caso específico, e já que se pretende focar nas alterações musculares que ocorrem na face, é de nosso interesse o estudo de signos rápidos que, por sua vez dividem-se em três tipos, nomeadamente micro expressão (involuntária e tanto surge como desaparece da face em menos de meio segundo), macro expressão (toda a face envolvida e com duração de meio a quatro segundos) e expressão subtil (ocorre aquando o início da sua manifestação com nível de intensidade baixo). Na fig. 1 consta um exemplar de cada signo rápido mencionado. A micro expressão (fig. 1A) expõe uma ligeira descida das sobrancelhas com contração dos cantos internos ao centro, o que poderá ocorrer enquanto se discursa, voltando à expressão neutra em menos de meio segundo; a macro expressão (fig. 1B) demonstra uma expressão completa de surpresa, afetando toda a face; a expressão subtil (fig.1C) espelha um exemplar de tristeza na sua manifestação inicial, com baixa intensidade.

Uma vez situadas e categorizadas, as expressões faciais, no âmbito do processo de comunicação, torna-se indispensável destacar as correntes teóricas responsáveis pelo estudo das mesmas. Neste âmbito existem teorias estruturalistas e funcionalistas. Das

![Signos Rápidos](image-url)
primeiras fazem parte a Cinésica, Proxémica e Paralinguística. Funcionais focam-se na origem, codificação e uso dos signos não-verbais [23]. Para o presente artigo destacar-se-á a Cinésica, deixando a indicação de que a definição das restantes teorias e suas ramificações encontram-se no artigo de Fernando Nogueira Dias supra referenciado.

Ray Birdwhistell deu início aqui o que se identifica como Cinésica (Kinesics, em inglês), que consiste no "estudo da linguagem social do corpo (...) [integrando movimentos localizados ou globais onde o objetivo passa por compreender] (...) a estrutura e os níveis de observação da linguagem corporal" (p. 17) [23].

"Um homem está dentro de uma cabine telefônica de vidro fechado. Você não pode ouvir uma palavra do que ele diz, mas você vê a sua postura, gestos e expressões faciais. Você vê a cinésica dele" [Vargas cit in. [28] (p. 483)].

"A face não é simplesmente usada para exibir a agitação emocional, mas sim como um canal de comunicação ativamente controlado" (p. 4) [27] e vários autores confirmam que a componente verbal de uma conversação face-a-face é menor que 35% e a não-verbal situa-se acima dos 65% [25] [26].

Apesar de já abranger movimentos corporais, o estudo destaca alguns que merecem especial atenção dos investigadores pois em muito contribuem para o aspeto final da manifestação expressiva facial. São gestos que podem ocorrer simultaneamente e Ekman, & Friesen [3] [20] [21] [27] categorizam-nos em cinco tipos, nomeadamente: emblemas, reguladores, adaptadores, ilustrativos e as expressões de emoções.

Emblemas são gestos que traduzem palavras e como são utilizados em contextos bastante específicos tornam-se facilmente percetíveis, como por exemplo, a careta, o sinal de vitória apenas com o indicador e o dedo médio erguidos, o braço levantado com punho fechado, levantamento apenas do dedo médio, sinal de cornudo com o dedo indicador e o mínimo erguidos, o piscar de um olho, a sobrancelha unilateral subida, entre outros. Reguladores são gestos que regulam, ajustam e sustêm o compasso de uma conversação e neste caso já existe uma elevada variação cultural. Referem-se a gestos como abanar a cabeça, movimentos oculares, no sentido de sugerir a um orador que continue a falar, que seja mais claro, ou que se apresse a terminar o seu discurso.

Adaptadores são gestos de necessidade física e surgem sem qualquer aviso ou detecção prévia, tal como coçar, sentar-se numa posição mais confortável. Podem ser considerados pistas para o que realmente a pessoa pensa, revelando o desconforto ou nervosismo perante a situação vigente.

Ilustrativos acompanham e dão ênfase a palavras ou expressões e criam uma imagem visual que suporta a mensagem verbal. São efetuados de forma involuntária e existe igualmente uma elevada variação cultural para a sua interpretação. “Em algumas culturas asiáticas, um uso extensivo de gestos ilustrativos é interpretado como fata de inteligência. Em culturas latinas, a inexistência dos mesmos, indica falta de interesse” (p. 37) [21]. Movimentos da cabeça, dos olhos, das mãos, fazem parte deste grupo.

As expressões de emoções são gestos faciais que refletem as mesmas. Existem universais e culturalmente variáveis. Segundo Adolphs e Gelder [6], as expressões de emoções são os signos faciais que se manifestam mais vezes durante uma interação social, ao invés de Chovil [cit. in [27] (p. 3)] que “conclui que dificilmente 20% das expressões, em conversações face-a-face, são afetivas”. Existe um fator primordial que diferencia a manifestação emocional de cultura para cultura, pois em alguns países asiáticos as pessoas são encorajadas a ocultar ao máximo a sua manifestação emocional e, por outro lado, em países latinos é exatamente o oposto.

2. Contexto Histórico

A universalidade de algumas expressões faciais foi um tema levantado há mais de um século atrás por Charles Darwin, naturalista do séc. XIX. As emoções são algo comum a todos os seres humanos e a possibilidade de igualdade de manifestação via facial seria uma forte aposta na corrente ideológica de Darwin. "Darwin (1872) foi o primeiro a sugerir que [as expressões faciais de emoções] seriam universais; as suas ideias sobre emoções eram uma peça central da sua teoria da evolução, o que sugeria que as emoções e as suas expressões seriam biologicamente inatas e adaptativas evolutivamente” (p. 1) [7].

Noventa anos depois, “as alegações de Darwin foram ressus-
citadas por Tomkins (1962; 1963)” (p. 1) [7], as quais teriam sido relativizadas até então pois acreditava-se que cada cultura teria a sua manifestação facial [7]. Foram nomes como Harré, Heelas e Lutz que consideravam as diferenças culturais interessantes e concentravam-se nelas [8].

“(…) Tomkins (1962; 1963), (...) sugeriu que a emoção é a base da motivação humana e que o reflexo da emoção estava no rosto (...) [e] realizou o primeiro estudo para demonstrar que as expressões faciais estão, de forma fiável, associadas a certos estados emocionais (Tomkins & McCarter, 1964). Mais tarde, Tomkins recrutou Paul Ekman e Carroll Izard para realizar o que é conhecido hoje como os estudos da universalidade” (p. 1) [7].

Universalistas, dos quais fazem parte “Ekman (1989), Brown (1991), Shaver, Wu e Schwartz (1992) (...) acreditam que ocorrem emoções fundamentais em todos os humanos (...) [pois] consideram as semelhanças mais convincentes” (p. 72) [8]. Oatley e Jenkins (p. 73) [8] afirmam que o facto de se optar por universalismo ou relativismo é uma “ideia antiga que já pertence ao passado”, pois “a ideia de que a mente humana é uma tábua rasa, na qual as culturas inscrevem qualquer coisa, já não é sustentável”. Desde os primeiros estudos da universalidade:

“(…) foram mais de 30 os que examinaram reconhecimento de expressões faciais e têm multiplicado a identificação universal de emoções no rosto (revisto em Matsumoto, 2001). Além disso, uma meta-análise de 168 conjuntos de dados, examinando reconhecimento de emoções no rosto e outros estímulos não-verbais, indicaram reconhecimento universal da emoção bem acima dos níveis esperados (Elfenbein & Ambady, 2002a). E houve mais de 75 estudos que demonstraram que essas mesmas expressões faciais são produzidas de forma espontânea quando as emoções são sentidas (Matsumoto, Keltner, Shiota, Frank & O’Sullivan, 2008) [inclusive em indivíduos invisuais]. Estes resultados são impressionantes, uma vez que eles foram produzidos por diferentes pesquisadores em todo o mundo, em laboratórios diferentes, utilizando diferentes metodologias com participantes de muitas culturas diferentes, mas todos convergindo para o mesmo conjunto de resultados” (p. 1) [7].

Ekman defende assim uma teoria denominada neuro-cultural que defende uma “padronização neuronal inata das expressões que é acompanhada por regras de manifestação, culturalmente variáveis, que regulam o momento em que cada expressão pode ser realizada” (p. 92) [8]. Dentro das regras de manifestação existe ainda uma outra variável, nomeadamente as normas sociais, mas a não-universalidade destas últimas não invalida a teoria neuro-cultural:

“Grande parte dos que escrevem sobre emoções referem a violação de importantes normas sociais como causa das emoções que sentimos. Podemos estar furiosos, enojados, desdenhosos, tristes, culpados, surpresos, talvez até amados ou satisfeitos. Isso depende de quem violou a norma e do que a norma se tratava. Normas, obviamente, não são universais; podem até nem ser totalmente partilhadas dentro de um grupo nacional ou cultura. Considere-se, por exemplo, a diferença de normas entre jovens e idosos (...)” (p. 35) [9].

Posto isto, atualmente as sete expressões faciais de emoção, com aspetos universalmente reconhecidos, são identificadas como Surpresa, Medo, Nojo, Desprezo, Raiva, Alegria e Tristeza (fig. 2) [7] [9].

F.2 Expressões Faciais Universais

3 . Contexto Psicológico e Social

No presente contexto poder-se-á inserir uma caraterização emocional paralela à enunciação de questões comportamentais associadas à emoção. No âmbito da caraterização emocional há propriedades que fundamentam a mesma como durabilidade da emoção, reações e efeitos positivos ou negativos na própria pessoa e nos outros durante ou depois da manifestação emocional, causas que provocam a mesma, o afeto que distingue apreciadores de não apreciadores da emoção em causa, as origens de tal manifestação emocional assim como as potenciais razões da sua existência.

No entanto esta situação não se verifica em todas as expressões de emoções, pois a emoção transmitida pelo emissor poderá obter um retorno completamente distinto do recetor, devido às variantes culturais e sociais já referidas; o que, por sua vez, abre um vasto leque de estudos no âmbito de uma interação social atentando na ação e reação dos interlocutores, tomando como fator principal a manifestação facial de emoções. Por outro lado, as expressões faciais de emoção são apenas um dos cinco tipos de Kinesics, como já referido anteriormente, o que significa que os restantes poderão ser inseridos no estudo de um dos presentes contextos para perceber em que circunstâncias se manifestam, quais os possíveis retornos emocionais com vários tipos de recetores, etc.

4. Contexto Expressivo

4.1. Humano

O estudo de expressões faciais humanas poder-se-á dividir em três áreas principais de influência na face: Sobrancelhas, olhos e boca. Ekman e Friesen [3] mencionam que o fator comum das três é precisamente a capacidade de movimento independente. Existem outras zonas faciais, mas por consequência da movimentação das sobrancelhas, a alteração da testa poderá ser incluída na secção das mesmas, assim como as pálpebras incluídas na secção dos olhos, e o queixo na secção da boca. As bochechas, visto que estão envolvidas em movimentações da boca e da pálpebra inferior (secção dos olhos), poderão ser referidas apenas quando necessário, associadas à área vigente. O nariz como poderá afetar a secção da boca e dos olhos, e já que raramente há movimentos altamente notórios no mesmo, poderá ser referido quando tiver um papel fundamental no formato da expressão em causa.

No âmbito das expressões faciais universalmente reconhecidas, o comportamento expressivo das sobrancelhas poderá ser composto por contração ao centro dos cantos internos (fig. 3A), subida dos cantos internos (fig. 3B) ou externos (fig. 3C), subida (fig. 3D) ou descida (fig. 3A) das sobrancelhas completas. As subidas dos cantos externos ou das sobrancelhas completas poderão ocorrer de forma unilateral (na bibliografia consultada não há registo de descidas individuais dos cantos internos ou externos, ou seja, quando acontece uma descida move-se a sobrancelha completa). Na secção dos olhos existe subida (fig. 3G) e descida (fig. 3E) das pálpebras superiores, subida (fig. 3E) e contração (fig. 3F) das inferiores. A subida das bochechas empurra um pouco as pálpebras inferiores para cima (fig. 3I). Na boca podem subir (fig. 3J), descer (fig. 3K), esticar (3L), e contrair (fig. 3O) os cantos da boca, contrair (fig. 3M) e pressionar (fig. 3N) ambos os lábios, subida do lábio superior (fig. 3P), depressão do lábio inferior (fig. 3Q), subida (fig. 3R) e descida (fig. 3S) de queixo, contração do nariz (fig. 3T) e a língua pode ser movida para fora da boca (fig. 3V). A cabeça (fig. 3U) e a direção ocular (fig. 3H) inscrem-se noutro tipo de Kinesic, como já referido, e possibilitam gestos ilustrativos em arco nos três eixos espaciais, que em muito contribuem para a expressão total de cada emoção.
No que diz respeito à intensidade das expressões faciais de emoção, há duas escalas importantes a ter em consideração. Uma define a contração muscular desde a expressão neutra até à expressão máxima de uma determinada emoção, e outra define a comparação de energia necessária para a manifestação das diferentes expressões de emoção. A primeira é identificada como Escala de Intensidade e será tomada como referência um exemplo adotado por Ekman, Friesen e Hager [11], o qual dividem em cinco categorias codificadas com letras de A a E, onde A significa o grau de intensidade traços, B corresponde a mínima, C significa marcada/pronunciada, D é severa/extrema e E significa máxima (Fig. 4).

Relativamente à segunda escala referida, é identificada como Escala de Energia e consta num estudo de Trnka e Stuchlíková [12]. Neste estudo os autores ordenam em três intensidades diferentes as expressões de emoção, nomeadamente, pouca, média e muita, mencionando por ordem ascendente as que menos energia necessitam para se manifestar até às altamente dispensiosas (Fig. 5).

Nas expressões faciais primárias de emoções nos humanos, visto que existem três áreas de influência em destaque (sobrancelhas, olhos e boca), parte-se do princípio que existem sete combinações possíveis (sobrancelhas, sobrancelhas + olhos, sobrancelhas + boca, olhos, olhos + boca, boca, sobrancelhas + olhos + boca) que poderão resultar em subcategorias das expressões faciais primárias. A existência de variações em qualquer área de influência, por exemplo dois tipos de boca para a mesma emoção, acresce o número de possibilidades expressivas. No entanto, não se verificam todas as combinações previstas sem ambiguidade no significado e não são todas anatomicamente possíveis como comprovam vários estudos efetuados ao longo dos anos [3] [7] [9] [10] [11], o que significa que há expressões, cujas combinações são universalmente reconhecidas, anatomicamente possíveis e sem ambiguidade no significado, como existem emoções com apenas algumas combinações nessas circunstâncias.

4.2 . Animado

No âmbito da animação “as pessoas estão [igualmente] habituadas a sentir ligações afetivas com personagens” (p. 1) [13], logo “se a audiência não se identifica, por alguma razão, com a personagem, vai perder o interesse rapidamente” (p. 4) [14], tal como numa interação social onde os sinais transmitidos poderão ser incorretamente percecionados ou mal recebidos pelos observadores [6]. Nesse sentido “os filmes animados e espetáculos televisivos usam uma série de técnicas para se ligarem emocionalmente às suas audiências” (p. 1) [13]. As expressões faciais, a banda sonora, vozes, efeitos sonoros e técnicas cinematográficas, como iluminação e movimentos de câmera, são alguns desses mesmos meios de conexão emocional e contágio (p. 1-2) [13].

Portadoras de grande carga emocional, as expressões faciais animadas são baseadas no comportamento humano mas reforçadas com movimentos exagerados [13].

“(…) a função dos animadores é única, pois dão vida aos desenhos criando a ilusão de espírito e vigor. Acentuam gestos e expressões nos desenhos que refletem a personalidade da personagem e faz-nos acreditar que os desenhos têm efetivamente sentimentos e que pensam por eles” (p. 6) [15].

Este novo fator implica uma correta aplicação dos princípios da animação para conseguir uma credível manifestação expressiva via facial, contribuindo assim, pela parte que lhe toca, para o contágio dos espetadores:

a) Squash (Comprimir) e Stretch (Esticar) – É um método que permite atribuir a noção de peso e volume à personagem. Muitos autores referem várias vezes o termo flexibilidade e aconselham os animadores a não terem medo de esticar e comprimir as personagens para tornar a animação mais expressiva, já que qualquer ser vivo ao movimentar-se revela igualmente alterações consideráveis na sua forma.
b) Anticipation (Antecipação) – É considerada uma preparação para a ação. Se os movimentos forem demasiado repentinos, sem antecipação, o espectador perde a noção do que está verdadeiramente a acontecer. Qualquer movimento necessita de uma antecipação, mesmo na vida real, ou torna-se um movimento sem força para a ação pretendida. A antecipação acontece no sentido contrário ao movimento da ação, muitas vezes reforçada com uma compressão expressiva da personagem.

c) Staging (Encenação) – Consiste em adotar posições completamente percebíveis da ação. Este trabalho é normalmente exemplificado em silhuetas pelos autores, pois se com as mesmas for totalmente perceptível o que está a acontecer, então o animador está a fazer corretamente o seu trabalho, impedindo adicionalmente que o cenário perturbe essa mesma percepção. “A ação é encenada para ser percebida; a personalidade é encenada para ser reconhecida; uma expressão para ser vista; um estado de espírito para contagiar afetivamente os espectadores” [16] [17].

d) Straight Ahead Action (Animação Contínua) e Pose-to-Pose Action (Animação pose a pose) – Consistem em dois processos de trabalho. No primeiro o animador começa por um fotograma e desenha a sequência toda seguida da ação vigente. Poder-se-á perder a noção de volume e tamanho com este método, no entanto pode-se adicionar o fator espontaneidade na ação. É utilizado para animar sequências muito rápidas. No segundo, o animador principal efetua os fotogramas chave, que constam em desenhos que determinam pontos extremos da ação e posteriormente são trabalhados os fotogramas intermédios, por pessoal assistente. Com este método o animador concentra-se no essencial e, como é dividido e mais elaborado o trabalho, o volume e tamanho são perfeitamente percebíveis e não se perdem algures no processo.

e) Follow Through (Continuação da Ação) e Overlapping (Sobreposição da Ação) – É um princípio que define uma temporização diferente por cada elemento da personagem. A continuidade define o movimento posterior, à paragem do tronco e das pernas, por parte de elementos dinâmicos como roupa, orelhas grandes, braços, cabelo, entre outros. A paragem destes últimos dá-se alguns fotogramas depois do tronco e das pernas para dinamizar o movimento geral e evitar a rigidez das primeiras animações da história. A sobreposição define os momentos onde a personagem muda de direção e os elementos dinâmicos seguem alguns fotogramas na anterior direção e só depois assumem a nova. Na face determina a ação em tempos diferentes dos vários elementos.

f) Slow In (Aceleração) e Slow Out (Abrandamento) – São sempre efetuados mais fotogramas na aceleração e no abrandamento, os quais correspondem, tal como já referido em cima, aos fotogramas desenhados pelo animador principal no método de desenvolvimento de posições-chave. Menos desenhos correspondem a uma animação mais rápida e mais desenhos correspondem a uma animação mais lenta. Estes dois casos inserem-se nas situações mais lentas.

g) Arcs (Arcos) – Quebrando a rigidez das primeiras animações, acentuaram-se movimentos da cabeça, tronco, membros, olhos, que em si desenham arcos ou formas circulares imaginárias. Foi um avanço que beneficiou consideravelmente a animação.

h) Secondary Action (Ação Secundária) – Este tipo de ação beneficia todas as ações principais. A partida não têm um significado específico na narrativa mas ajudam a preencher alguma monotonia em determinadas partes do corpo, ou dão ênfase a um qualquer tipo de movimento característico ou vicioso da própria personagem.

i) Timing (Temporização) – Por norma utilizava-se um desenho por cada dois fotogramas na animação 2D. Tendo em conta que em longas-metragens são projetadas a 24 fotogramas por segundo, terão de ser feitos 12 desenhos por segundo, excetuando movimentos panorâmicos e falas rápidas num discurso. Já em 3D são registados 24 desenhos por segundo. As diferentes emoções manifestam-se em temporizações distintas logo, na animação, os fotogramas correspondentes a cada uma têm uma distribuição diferente ao longo da linha de tempo.

j) Exaggeration (Exagero) – O exagero não é uma distorção, mas sim uma acentuação de movimentos, expressões, etc. Os autores referem uma semelhança com caricaturas, no sentido de acentuar características faciais mas, neste caso, no movimento da animação.

k) Volumetry (Volumetria) – Tem de constar volumetria, numa personagem. Mesmo em alguns tipos de animação/illustração 2D, existe um sentido de tridimensionalidade que tem de ser respeitado para ser credível. Nesse sentido, e um dos erros mais
incriminatórios da falta de sensibilidade volumétrica, por parte do animador, são espelhamentos que quebram a tridimensionalidade simulada (animação/ilustração 2D).

I) Appeal (Design Atrativo) – O design das personagens é muito importante e consta num dos princípios da animação. Um design que comunique de forma simples e direta é um bom design.

Todos estes princípios foram publicados pela primeira vez por Thomas e Johnston [16] relativamente à animação 2D e são respeitados até aos dias de hoje. Lasseter [17], uns anos mais tarde, e relativamente à animação 3D, apenas excluiu o tópico Volumetria pois, em 3D, existe desde o primeiro momento no qual a personagem é criada, já que trabalha-se automaticamente nos três eixos espaciais (coordenadas cartesianas - x, y, z).

Relativamente às restantes técnicas de contágio e despertar de emoções nos espectadores é utilizado o som (banda sonora, vozes, efeitos sonoros), técnicas cinematográficas (iluminação, movimentos de câmara) [13] [18], técnicas de representação tais como “as reações de personagens às emoções umas das outras (...) assim como a interação entre duas personagens [que por sua vez] é uma das principais fontes de humor” (p. 1) [13]; já que: “(...) não respondemos pronta e isoladamente às ações individuais das personagens; tornamo-nos mais interessados nelas, apenas quando as personagens são inseridas num contexto ambiental ou emocional e é a interação que proporciona o interesse” (p. 121) [19].

No que diz respeito à iluminação, Tomlinson [13] refere que, por exemplo, uma luz vermelha posicionada de baixo para cima, em direcção à zona frontal da personagem, atribui um ambiente diabólico e raivoso. A correta iluminação também interfere na emoção em si e Faigin [10] lembra um episódio embaraçoso na inauguração da estátua monumental do ex-presidente dos Estados Unidos Abraham Lincoln, onde a iluminação proposta pelo escultor foi ignorada, a qual atribuía um ar preensador ao ex-presidente, e foi improvisada um outro tipo de iluminação que criava uma mensagem de susto e não pensativo. Relativamente a movimentos de câmara, Tomlinson (p. 2) [13] exemplifica com um lento zoom que tem o intuito de intensificar a emoção ou atenção da personagem, mas, no entanto, servem estes pequenos exemplos como mera referência pois no presente artigo atentou-se, deliberada-

mente com pormenor, apenas as técnicas de contágio relativas à correta manifestação expressiva via facial na animação.

4.3. Humano, Animado 2D e Animado 3D

Finalizamos com um exemplar de cada uma das sete expressões faciais universais de emoção, confrontando três realidades distintas, após uma pesquisa e análise de várias animações por parte da Disney e Pixar assim como exemplares humanos provenientes do estudo de Ekman e ainda ilustrações de Richard Williams [29] e Preston Blair [15].
Conclusão
Uma boa animação 3D baseia-se em diversos estudos previamente efetuados para animação 2D onde os princípios acabam por ser uniformes para ambas as linguagens. Toda a dinâmica atribuída à massa corporal das personagens acaba definitivamente por contagiarem os espectadores e o presente artigo permite concluir que limitar o conhecimento apenas ao aspeto das expressões faciais em si, acaba por ser insuficiente para uma correta transmissão das mesmas via animação 3D, já que estão altamente associadas a outros tipos de comportamentos não-verbais.

O animador deverá manter um discurso fundamentado com o guionista, realizador, produtor, outro animador, e não apenas limitar-se a abrir o software e animar “sem questionar”. Com conhecimento na área social e comportamental, emocional, expressiva humana e animada o animador saberá igualmente que expressão utilizar e em que contextos utilizar e tornar cada vez mais “rica” a sua intervenção, tanto no âmbito do trabalho em equipa, com trabalhadores de outras funções, como na própria animação.

Investigadores poderão optar por variadíssimos caminhos, no que diz respeito ao estudo de expressões faciais para animação 3D, muitos deles expostos no presente artigo e deixamos, uma vez mais, o apelo ao contributo dos mesmos, incentivando à publicação na Língua Portuguesa.

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Reasoning through drawing
Introductory Learning module on UX design

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Abstract

Reflection through drawing is a strategy capable of developing perception and project values. Several studies explain how drawing serves as a reasoning tool when engaging a student to learn a subject of study; the learner tries to represent their comprehension on a specific subject. The act of drawing works as an incentive, students interact with the subject of study through the graphic representation of an idea. Although drawing is useful as a tool, the lack of a stronger link with writing and talking is still missed. There is the need to empower drawing as a reasoning tool, find new links and project other future associations.

Storytelling provides a possible link between reasoning through drawing, talking, writing and information management. After organizing the information in a storytelling sequence, the learner can draw the sequence employing a metaphor similar to the “Russian Matrioskas”, where elements relate to several levels of contexts. The learners can relate information in several levels, organizing groups of elements in small contexts and those inside larger contexts. This metaphorical relation within this model relates with everyday life experiences in how learners solve problems or define outcomes for their projects. The use of systemized approaches applied on problem solving in personal productivity systems (PPS) as the Get Things Done system (GTD) enable a perspective related with different levels of settings. This learning strategy is crucial in the contemporaneous context of User Interface design because it allows new outcomes and allows learners to understand in a systematic approach how to develop and empower a specific idea.

Keywords

Drawing, storytelling, user interface, UX (user experience), mockup

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1 Introduction

Teachers in their daily work often contact with demotivated learners with specific learning problems due to reasoning difficulties. That demotivation is caused by a false notion of the time required to understand and master a specific subject. The rhythm of contemporary life and the idea of ephemeral it conveys undermine the value of project as management of different activities to achieve a predetermined objective. The necessity of developing a project that amplifies resilience next to the student is a contemporaneous need, in order to offer learners a strategic approach regarding the issue of project development. This paper presents an experimental module focusing on user interface design in the first stages of the project, dealing with mockup and flow definition in the mockup project.

2 Learning module external structure

The learning module design follows assumptions of a constant need in adapting to contemporaneous perspectives, giving learners the tools and concepts to better cope with the challenges of this digital era, but also giving them conceptual tools that allow a continuous learning effort and an insight in constant adaptations to new trends.

The module follows general subjects of interest in the area related to the course, the layout is the recipient of general functions, featuring a malleable shape allowing evolutions in the briefing design in a response to future needs in the area associated with the course curriculum. The source layout design makes a response to the learner formation and contemporaneous concepts in accessing and mapping information, because the areas related with media interaction are volatile in their nature. The teacher in charge of the briefing is responsible by a constant evaluation in trends of behaviors and the ways the learners experience information, media and the learning experience design. Due to the lack of time in direct contact with the contemporaneous learning context, the learning experience has to amplify and ameliorate its contact with the study thematic and that could be achieved though a theoretical and practical approach.

The course briefing is organized in four vectors, related to different layers of information; the course phases, the plan containing the strategy related with learning theories, the sessions and the flow. These four elements interact between each other to empower the learning experience. The course briefing incorporates in the course phases, diagnostic, development and the final output, this organization relates to the course plan, the learning strategy in the several sessions and in some courses is possible to reinforce the concept through a more emotional experience where drawing takes an important role in energizing the experience. Fig. 1.
The design takes into account the needs found in the area where the briefing acts as learning experience. Before the start of each semester the teacher performs and evaluates the learner’s needs. The trends in the professional area related with the course influences the briefing design. When working with different media the need for a constant update of strategies and values arises due to the nature of some borderline areas intersected by new learning developments or practices, one of these examples is the recreational trend in learning contents.

3. Implicit structure applied in the Learning Module design

To overcome potential problems created by a weak emotional engagement to the subject in study, the module conveys the drawing as a learning structure tool in an effort to promote new strategies in developing associations in a fast and interactive process obviously supported by speech and writing.

Drawing enables simultaneously in the Learners an overview of the process and a development of a sequential idea or a layer view on the subject in study, through a process of reasoning through pictures, Fig. 2.

Doodling acts as a “tool”, extracting emotional connections from the “precise information” package of information presented in the learning experience. When enabled, drawing uses several metaphors to translate different concepts and functionalities. The sequence of those “reasoning through pictures” moments develops the storytelling sequence, Fig. 3.

To enable the learning module the teacher must overcome the negative experiences arranging the sequence of learning materials in an attractive and engaging design, providing different moments displaying the positive outcomes but also the outcomes that arise when learners fail a successful reasoning. Fig. 4.

The notion of understanding within the framework of not only having knowledge but also doing something with it, is a performance view and in that sense drawing (sketching and doodling) can act as activities focused on understanding, they are a variety of thought demanding things with a topic in mind, similar to explaining, finding evidence and examples, generalizing, creating analogies and representing the topic in a new way (Entwistle, 2009) [1].

Reasoning through drawing and schematics can help the expression of an idea. In that way schematics help the learners structure the path and narrative elements within the storytelling
sequence. This strategy can engage the learners in displaying their own structure and logic system (Ionascu, 2013) [2].

Despite the fact that drawing embodies meaning - diagrammatically, figuratively or abstractly, meaning still needs to be constructed and negotiated. Related with verbal expression it is unlikely that the verbal or the visual operate in isolation from each other.

We may be naming when we draw and visualizing when we write or talk. Despite the ambiguity of the imagery, that ambiguity is useful as tool for reflection and dialogue (Rogers, 2012) [3].

The creative reasoning implicit in drawing is distinct from, but complementary to, reasoning through argumentation, asking learners to read a text and draw what they have understood requires them to make explicit this understanding in an inspeckable form. A further important research area concerns how teachers can best support their students to use drawing alongside writing and talking in the classroom (Ainsworth, Prain, Tytler, 2011) [4].

The author Marcelline Krafchick relates these ideas in her book "How belief stories matter - an approach to myth", by illustrating what other people do, stories bind together members of a group more effectively than through the mere listing of rules. The focus on specific character concretized behavior for the imagination to take hold and remember (Krafchick, 2010, pag.36) [5].

As the authors Siu-Lan Tan and Megan E. Kelly note; in the classroom drawing has the power to enable the learners to improve their acuity over the object in study, allowing the teacher to detect evolutions in their acuity, observation made on their graphical annotations resultant from multiple exposures and interactions with the subject studied on the learning module (Tan, Kelly, 2004) [6].

Drawing schematics relate not only with "visual shapes" but also with “functional structures” conceptual or technical in their nature. Helping the learner to discover his own structure of logic, empowers his self-confidence when expressing an idea and promotes the transcoding practice by drawing along future learning experiences. Fig. 5.

The metaphor used in the area of cinematographic editing can be applied in the interpretation of the project map to develop new readings and meanings within. Contrasts are thus created by the sequence of different tasks, projects and visions, Fig. 6.

The biggest advantage in this metaphor remains in its origins, being a communication metaphor and a form of associating different ideas and creating meaning. In the contemporaneous society, this metaphor is mostly used in audiovisual communication: the elements when arranged and presented to the learner in a “Russian Matrioskas” configuration reinforce the concept idea and following associations. The thought of creating meaning through the association of different ideas must prevail in the student’s experience with the learning module. The metaphor of cinematographic montage on the other hand is also associated with pps - personal productivity systems; they allow learners
to engage with the project planning and development of activities using a timetable plan. Using this method the learners evaluate the repercussion of certain tasks in further project execution and visions, Fig. 7.

These personal productivity system models try to organize multiple and overflowing demands of work and lifestyles by defining things in terms of sets. This relation is possible due to the role of storytelling, providing information from drawing where the learner reasons through pictures and organizes information in several levels of contexts. From the retrieval of information, the learner reasons the experience in different scopes allowing multiple crucial metaphors applying important problem solving techniques useful to everyday life.

The drawing applied in the classroom context has a long history, related to representing the visual elements, but no so often applied in translating processes. Recently with the curriculum related with UX design, drawing resurfaced again mainly in low and medium fidelity prototypes. In this context drawing doesn’t function only as system of representation but also as interaction system containing several flows of information. Drawing enables the visual usability reasoning in the system and the mental map projected on the different levels of actions related with the app.

As the author Bruce Hanington refers in his book “Universal Methods of Design”, low and medium fidelity prototypes are common throughout early ideation processes appearing as concept sketch models. These serve an internal development purpose, they are also an excellent tool for the early testing of ideas with clients and users in research, allowing constructive reviews and timely feedback for interactive changes. The interactive element offered by drawing is a low fidelity prototype. Users are presented with pages representing interface screens. In completing a task or working toward a goal, the participant indicates what he or she would do in each screen page, while the researcher swaps subsequent pages to simulate the interface response (Hanington, 2012, pag. 138) [7]. This low fidelity diagnostic has several levels from the low to the higher levels of fidelity all part of a survey in the design project. The term fidelity describes the level of detail on the system deliverables. Low-fidelity deliverables are a rough approximation of the intended user experience. These are fast methods, capturing the essential characteristics of the object of study; the high fidelity mockup gives a more accurate representation of the object, including not just core features but also specifics of the site’s behavior and even aspects of the final visual design (Bowles, Box, 2010, pag.81) [8].

Even if it is strange to construct a digital product prototype out of physical materials such as paper, this technique can really work because of its low cost and easiness in fast modifications. Those are extremely useful in discussing alternatives with colleagues and clients. Developing a number of different wireframes is time-consuming, ideas that look complete can lead people to irrelevant details and in early design the designer has to explain repeatedly to the client the real characteristics of the product, while the low fidelity nature of a sketch conveys the big picture preventing the client to view them as some form of finished product. (Allen, Chudley, 2012, pag. 239) [9].

The problematic rests on the question of “flow” and the question on how to engage the user in a positive recordable experience of interaction and a way to avoid monotony. Drawing can empower in the designer the systematic view in how the system performs through different perspectives on the system structure. One of those structures is the dramatic evolution chart, a chart displaying the evolution of dramatic or emotional intensity divided in two vertical axes, good fortune and bad fortune along a horizontal element representing time.

An app can also have a hidden story, and in that way it
establishes a relation with mnemonic techniques such as the Simonides “palace of memory”. Planning this implicit element helps strengthening the product and when done with efficiency, it empowers the relation and interactivity with the app. The efficiency factor has nothing to do with creating obvious elements of entertainment, but using elements that ease the flow and help pin the several stages of actions within the app. To achieve these results the learners must know how to plan the stages and understand how time is perceived along the interaction.

Events in the world take time to unfold, perceiving objects and events also takes time and the same occurs with remembering perceived events, thinking about past and future events, learning from those, acting on plans and reacting to perceived and remembered events (Johnson, 2010, pag. 151) [10].

Many of those digital systems have in their experience of interaction a metaphorical configuration of flat lines and in that way they are dangerously near to become a confuse system, without incorporating a dramatic curve perception in the app design, the final outcome will have more problems in appealing the user. It’s in the prototype phase that the designer can plan those phases and levels of sensorial elements.

Prescriptive stories describe the world, as it will be explained later in more detail, mockups embed with storytelling elements are similar to descriptive stories, except they describe a user experience that doesn’t exist yet. Software specifications often contain prescriptive stories in the form of scenarios that accompany uses cases or other narrative ways of describing the user experience. These stories can be quite detailed, and they are used to illustrate the requirements documents (Brooks, Quesenbery, 2011) [11].

The degree program design on UX follows assumptions of a constant need in adapting to contemporaneous perspectives giving the learners the tools and concepts to better cope with the challenges of this digital era but also giving them conceptual tools that allow a continuous learning effort.

If the sequential way to organize information, common in the traditional printing media is a reference for older generations, the new paradigm, holistic in his nature, is more appropriated in a horizontal layout description, allowing the information to be distributed in a map layout configuration. The new paradigm distributes the holistic vectors of information in multiple configurations organized in time and value of repercussions, in a subtle cartography of time. A successful project mapping in a user interface mockup must follow an architecture that unveils in a foresight mode the results and outcomes achieved by the final user.

Conclusion

Designing a learning module on UX design mockups including drawing as an active tool is a challenge. It requires incorporate new strategies. Even if drawing is considered an expressive tool distant from the complexity of digital universe is still easily adaptable to the holistic perception of information. It allows drawing associations in a timeline map presenting several options in project development. Beyond its render possibilities, drawing gives access to a deeper learning, through the interactions and evolutions to exposures on a defined challenge. Drawing in a UX drawing perspective allows also in only one channel, to relate a wireframe perspective interwoven with a flow of moments, the screens’ sequence related to the different functionalities are associated to an implicit story within the app.

References

A observação de filmes e curtas metragens de animação ao longo dos tempos, com diferentes abordagens estéticas, origina várias questões.

Será que a técnica condiciona a linguagem estética de uma animação? Ou será a mensagem e a narrativa que ajudarão à decisão? Quais serão os elementos que ajudam? Serão financeiros, temporais, será o público a que se destinam? Será só evolução tecnológica?

Estas são as questões base deste estudo sobre a estética na animação, tendo especial atenção ao desenho, à linha de contorno e à relação destes com o sistema de coordenadas e com a técnica utilizada.

Raquel Sofia M. dos Santos

Keywords
Estética; Animação; 2D; 3D; CGI; Técnica; Linguagem; Narrativa; Condicionantes da linguagem; Linha; Contorno; Linha de Contorno; Expressão; Visual; Desenho; Personagens; Marionetas;
Introdução

A animação teve um início distante dos tempos actuais e, como tal, tem um percurso e uma evolução visível. Ao longo do tempo foi desenvolvido um vasto conjunto de técnicas, ferramentas e instrumentos para, iludir o movimento, dando vida a objectos inanimados, a desenhos, a imagens estáticas entre outros elementos passíveis de serem animados.

Para a geração que cresceu com filmes de animação da Disney, com uma linguagem estética bastante característica, sente ao ver os novos filmes de animação da Pixar até mesmo da Disney e de outras companhias e estádios de animação, uma estética e uma atmosfera diferente daquela com que cresceu. Esta diferença na linguagem e na atmosfera não é necessariamente negativa nem obrigatoriamente positiva, mas talvez uma característica da evolução.

Assim começam a surgir questões como, por exemplo, será intrínseco à evolução a alteração da linguagem? Esta alteração na linguagem estará relacionada com a técnica, e por isso, com a evolução tecnológica? Será que a técnica condiciona ou influencia a linguagem e a estética visual da obra? Será a linguagem estética e a atmosfera visual do produto relevante para a transmissão da narrativa e para cativar o público alvo? Quais os factores e elementos para definir a linguagem? E a técnica?Existirão fatores económicos, temporais, de experiência e de conhecimento que influenciem a escolha?

A Técnica e a Linguagem na Animação

Uma animação é construída através da junção de elementos como a narrativa e imagens em sequência. Estas imagens podem ser realizadas através de um vasto conjunto de instrumentos, métodos, ferramentas e técnicas. Podem ser imagens bidimensionais ou tridimensionais e ainda, independentemente do sistema de coordenadas podem ser classificadas como CGI, imagens geradas por computador (computer generated imagery) ou tradicionais tendo como objectos e como forma de produção técnicas e ferramentas tradicionais e manuais.

Existem animações realizadas a partir de desenhos digitais e vectoriais, ou seja CGI, com apenas duas dimensões. Como exemplo temos a curta metragem de Will Rose, “The Goat Herder and his Lots and Lots of Goats” (2012). Esta curta tem uma incrível atmosfera cromática, bastante apelativa e singular, funciona com silhuetas que não são apenas negras. Estas formas são digitais, animadas digitalmente (CGI) e são formas sem linha de contorno visível que as delimita.

Outras obras são realizadas igualmente com desenhos, mas desta vez manuais. É com este tipo de animações, manuais e tradicionais, que devemos estar mais familiarizados, enquanto espectadores de gerações anteriores. A maior parte dos desenhos animados disponíveis na televisão há algum tempo atrás eram quase todos produzidos desta forma, como várias obras da Disney, principalmente, as mais antigas. Animações com desenhos manuais podem ser, por exemplo, desde “Steamboat Willie” [01] (1928) até “The Princess and the Frog” [02] (2009) com muitas obras entre este espaço temporal e após esta data. A animação “A Cat in Paris” [03] (2012) de Jean-Loup Felicioli e Alain Gagnol é um óptimo exemplo de uma obra produzida com uma técnica tradicional de desenho bidimensional, em papel, e a prova de que o desenho tem vantagens, sendo uma delas a plasticidade dos materiais tradicionais. Nesta obra o domínio e a liberdade sobre as perspectivas, as escalas e as formas é tanta, que estas não são fixas mas sim livres. Livres para serem usadas, para transmitirem uma mensagem, para transmitirem emoções e sensações ao longo da narrativa. Nesta obra expressiva as formas são delimitadas e enriquecidas através de uma linha de contorno e de pormenores interiores.

Com uma origem menos ocidental temos ainda “Spirited Away” [04] (2001) de Hayao Miyazaki produzido por Studio Ghibli. Esta obra é também realizada a partir de desenhos, muitos desenhos, que dão vida, movimento e acção às personagens e à narrativa. Neste exemplo também se observa a existência de uma linha que contorna e pormenoriza as personagens.

Partindo para um mundo tridimensional temos vários exemplos a considerar, também eles com variadas técnicas, linguagens e narrativas.

As animações tridimensionais podem ou não ser CGI, ou seja, podem ser geradas por softwares 3D ou criadas a partir de objectos existentes ou construídos.

A produtora de cinema portuguesa, Sardinha em Lata, tem um
óptimo exemplo de uma animação tridimensional, com personagens, cenários e objectos construídos manualmente e tradicionalmente, que com muita paciência e muitas fotografias ganham vida para contar a história. A curta metragem “Desassossego” [05] (2010), é classificada como animação de volumes, fotografia a animação aparece. Neste tipo de animação os materiais e as texturas são, muitas vezes, reais como tecidos, plásticos, papiés, cartões entre outros. As personagens são tridimensionais e palpáveis movendo-se num ambiente tridimensional, neste caso, com cenários muito semelhantes aos do nosso quotidiano. Neste caso também, não existe uma linha que delimita ou pormenoriza as personagens. Não poderia existir como fazendo parte das personagens e objectos tridimensionais, isto porque, os objectos tridimensionais têm a particularidade de que se podem ver de qualquer lado e ângulo.

Se se desenhasse uma linha de contorno de uma personagem como que se unisse a parte da frente à parte de trás, no momento em que se posicionasse a personagem de lado essa linha não iria fazer sentido. Esta característica também acontece quando as personagens, cenários e objectos são modelados e construídos tridimensionalmente num software 3D. Como exemplo desta opção técnica, e bons exemplos não faltam, temos “Hotel Transylvania” [06] (2012) produzido por Sony Pictures, “Brave” [07] (2012) produzido por Pixar. Em ambos a técnica é semelhante, são mundos tridimensionais criados em computador, ou seja, CGI. Sendo 3D não existe linha de contorno, existem objectos com textura e volumetria que nos parecem reais e familiares e ainda existem personagens e criaturas credíveis de coabitar e dividir o nosso mundo real. Desta forma a animação aproxima-se do mundo real como o conhecemos, conservando a liberdade de formas e de exercícios formais e de expressão associados à ilustração contrastando com o cinema de imagem real. Uma obra ainda exemplo do uso de imagens geradas por computador, é “The Blue Umbrella” [08] (2013) produzido pela Pixar, esta animação é tão hipermistério nas suas imagens que coloca os espectadores a questionarem se o que estão a ver é real ou não.

Uma animação de referência que mistura a animação de volumes com efeitos em CGI é “Paranorman” [09] (2012) produzido por Laika. Esta obra começa como qualquer outra, com desenho 2D de concept art, desenvolvimento e estudo de personagens e cenários, de seguida em softwares 3D são modeladas as personagens para as imprimir e montar, são construídos cenários e objectos para os montar na obra final. A obra final é montada a obra final para ser fotografada vezes sem conta. Para terminar é necessário intensificar alguns momentos e efeitos, assim, nesta altura entram alguns efeitos CGI para tornar tudo ainda mais paranormal.

“Rabbit and Deer” [10] (2012) produzido por Péter Vácz é uma curta que, à semelhança com “Paranorman”, também mistura várias técnicas. Nesta curta existem duas personagens um veado e um coelho que começam por ser personagens bidimensionais desenhadas em papel de forma tradicional e desta forma visual e técnica a história desenvolve-se.

Desenvolve-se até que o veado fica obcecado em descobrir o caminho para a tridimensionalidade. Ao fim de algum tempo consegue alcançá-la e torna-se uma personagem tridimensional. De um desenho com linha de contorno transforma-se num objecto modelado e impresso em 3D sem linha de contorno. Para além do veado, é construído todo um novo mundo tridimensional para além do bidimensional que existia.

Esta curta em especial é óptima para tentar responder à questão sobre a relação entre a técnica e a linguagem. Parece óbvio, com este exemplo e outros anteriores, que a linguagem muda de acordo com a técnica. Se se animar desenhos, ou areia, ou volumes e objectos, ou se se construir personagens 3D digitalmente, a linguagem estética e a atmosfera da animação serão diferentes. Mas, talvez esta questão não seja assim tão linear e absoluta.

Independente, da resposta a esta questão, a verdade é que mesmo que a técnica não condicione a linguagem estética a evolução tecnológica pode fazê-lo. Só se consegue ter filmes com uma estética semelhante à “Brave” e ao “Hotel Transylvania” porque se desenvolveu tecnologia, software e hardware que possibilita a criação destes mundos tridimensionais digitais. Até essa data isso não seria possível.

Mas, será que este facto invalida que o uso de técnicas e tecnologias mais actuais, como softwares 3D digitais, impossibilitam a estética tradicional do desenho com linha de contorno, a liberdade, a expressividade e a fluididade da mão de um artista,
por exemplo.

Existem exemplos de animações capazes de mostrar que mesmo usando uma técnica actual a linguagem não tem necessariamente que ser totalmente diferente do tradicional.

Para começar há o exemplo de mais uma curta da Disney, “Paperman” [11] (2012), esta curta tem uma atmosfera romântica e fantástica, quase surreal. Remete para a nostalgia do passado, para a geração que cresceu com a Disney, com o traço, a linha de contorno, a expressão livre e fluida. A curta foi inicialmente desenvolvida em 3D CGI e após isto estar terminado, em pós-produção foi aplicada, por rotoscopia, a linha de contorno e outras características que aproximam a linguagem estética à linguagem tradicional de filmes passados e realizados com técnicas tradicionais. Esta curta metragem é um exemplo de como mesmo fazendo uso destas novas tecnologias e softwares não é necessário nem obrigatório abandonar a linguagem tradicional, o traço humano, a expressividade ou personalidade, principalmente, se os autores e a narrativa se identificarem com ela.

Para além desta curta metragem existe outra produzida por Damian Nenow, “Paths of Hate” [12] (2010), esta foi igualmente produzida em 3D CGI mas no próprio software foi trabalhada a luz de forma a que se formasse uma linha de contorno dos objectos e das personagens. Neste caso, a linha de contorno não se aproxima de uma estética revivalista e nostálgica da mesma forma que “Paperman”, mas a linha remete para a linguagem, normalmente, associada à banda desenhada.

Para terminar pode-se referir ainda mais uma curta metragem cuja linguagem não remete directamente para a técnica utilizada, “What Happens When Children Don’t Eat Soup” [13] (2011) produzido por Pawel Prewencki. Nesta curta de atmosfera macabra a duas cores, preto e vermelho, os movimentos são fluidos, existem texturas com movimento, formas que embora não tenham linha de contorno parecem trabalhadas manualmente imagem após imagem, frame após frame. Mas esta obra não foi criada, pelo menos não na sua totalidade, manualmente de forma tradicional, mas sim em 3D CGI. Estas três referências reforçam que a resposta não é linear, mas sim relativa.

A linguagem depende das intenções dos autores, das suas experiências, do seu conhecimento e das suas ambições. São também estes elementos e outros como, factores económicos, temporais e de disponibilidade que acabam por condicionar a linguagem e a decisão da técnica, das ferramentas e dos processos a utilizar na produção da animação.

Assim obtém-se resposta para algumas das questões iniciais como se seria intrínseco à evolução a alteração da linguagem? Ou se a alteração da linguagem estava relacionada com a técnica, ou com a evolução tecnológica? Se a técnica condiciona a linguagem? Ou quais os factores que ajudam a definir a técnica e a linguagem?

**O Desenho na Animação**

Com o estudo e a análise do processo de realização das várias animações mencionadas anteriormente, conclui-se que todas elas são muito diferentes entre si. Desde a técnica, à linguagem, à narrativa, à forma de contar a história, à atmosfera que envolve cada uma, assim numa primeira vista, parece que pouco têm em comum.

A verdade é que, em geral, todas as animações têm em comum o desenho, independentemente, do momento em que este faz parte do processo de criação da animação.

O desenho, faz parte do processo criativo, das fases iniciais como o estudo e desenvolvimento das personagens, dos cenários, concept art, composições, enquadramentos e na construção do storyboard, mas não está limitado apenas a estes momentos iniciais.

Desde o início da vida de um animador, ilustrador, artista e até de um designer é o desenho que se começa por aprender e controlar, pelas suas vantagens ao nível da fluidez, expressão, plasticidade, liberdade e facilidade de obter e treinar. Devido à acessibilidade desta ferramenta e desta técnica, o desenho é importante para qualquer área artística e não apenas para a animação. Pode-se associar o conceito desenho a várias áreas, por exemplo, o desenho de letras, de formas bidimensionais ou tridimensionais, de objectos e produtos, até de páginas e publicações, e por isso existem também várias tipologias de desenho, desde o desenho artístico ao científico, passando pelo técnico e pelo esboço. O desenho quando associado à animação continua a ter estes usos e tipologias.

A partir daqui começam a levantar-se questões sobre os
limites do conceito “desenho”. Pode-se falar do desenho mesmo em animação CGI tridimensional em casos como “Brave”, “The Blue Umbrella” e “Hotel Transylvania”? E casos como “Paranorman” e “Desassossego”? Pode-se atribuir características como exagero e a liberdade no desenho das formas, dos movimentos, das expressões, das escalas e perspectivas dos vários elementos da animação tridimensional? O desenho nomeia apenas um desenho bidimensional? Refere-se apenas a linha ou a mancha também? Tentando responder a esta questão, temos a obra “Paperman” que apresenta linha de contorno e mancha, neste caso falamos de desenho, porque não falar de desenho de igual forma em obras como “Brave” ou “Desassossego”? Simplesmente porque não têm a linha, característica mais visível do desenho? Pode-se afirmar então que o desenho para além de manual pode ser CGI e escultura?

Se assim for o desenho está sempre envolvido e a verdade é que nos acompanha desde tempos pré-históricos. Será que, por isso, se pode acrescentar um outro conceito, o de familiaridade da linguagem e da técnica? Será este conceito importante na escolha da linguagem para uma animação? A verdade é que existe uma possível resposta, com a linguagem nostálgica do desenho, na curta da Disney “Paperman”. Esta obra foi bastante aclamada pela sua linguagem revivalista e vintage.

Mas esta admiração pode não ser somente devido à familiaridade da técnica e da linguagem mas também devido às modas que vão surgindo e desaparecendo influenciando os gostos estéticos seja em que meio for. O vintage, neste caso, tem características estéticas visuais e, por isto, o vintage foi apreciado numa determinada altura, tudo o que tenha uma estética semelhante será admirado também.

Conclusão

Tanto na animação como na ilustração falar em bidimensional ou tridimensional não é sinônimo de falar em CG ou tradicional e manual.

O desenho, digital ou manual, está implícito na animação e na sua realização seja CG, seja bidimensional ou tridimensional, mas existem diferenças no desenho para cada uma destas categorias da animação. Tendo em conta os exemplos anteriores, como referências, pode-se identificar várias características de linguagens estéticas, como por exemplo, linguagem minimal, hiper-realista, abstrata, fantástica e anime de acordo com a expressividade e o traço, com a complexidade ou simplicidade dos cenários, das personagens e das formas envolvidas, entre outros aspectos visuais. Isto independentemente da técnica ou ferramentas.

As diversas ferramentas estão à inteira disponibilidade dos autores, desde o lápis ao computador, dos softwares aos hardwares, dos objectos aos materiais, isto para que, em combinação ou isolados, construam uma estética visual que caracterize e dê forma à animação.

Cada ferramenta, cada técnica tem as suas vantagens e desvantagens, é necessário estudar qual ou quais serão benéficas para a animação em questão.

O computador é mais uma ferramenta e com ela é possível fazer o que se quer e precisa, além disso tanto os softwares como os hardwares são construídos e desenvolvidos pelos homens para responder às suas necessidades, seja em que área for. Esta diversidade de técnicas, de ferramentas e processos resulta numa diversidade estética que, por sua vez, é positiva pois existe um variado e diferentes gostos e interesses por parte tanto dos artistas como do público. Com tanta escolha é só definir a melhor técnica, o melhor meio e o melhor processo para transmitir a mensagem ao público alvo.

A linguagem estética na animação pode alterar-se com a evolução tecnológica mas não é diretamente influenciada pela técnica escolhida para uma determinada animação. A opção por uma linguagem ou técnica depende de vários fatores desde a vontade e gosto dos artistas envolvidos, ao conhecimento e experiência dos mesmos, aos recursos económicos e temporais mas também podem estar relacionadas com a narrativa e a mensagem a transmitir. Isto levanta a questão de qual a relação entre a linguagem e a narrativa? Qual a relação entre o percurso dos artistas e a linguagem? Qual o objetivo da linguagem? Será cativar o público, como aconteceu com “Paperman”, ou transmitir uma mensagem subliminar? Será reforçar as características e atmosfera da narrativa? Ou será contextualizar, a animação e o espectador, emocionalmente conforme as preferências do autor? Serão todas as anteriores em simultâneo? Para já, estas questões, ficam a pairar sem resposta concreta prontas para o início de outro estudo.

A Estética na Animação - Linha do Contorno
Raquel Sofia Macedo dos Santos
A Estética na Animação - Linha do Contorno

Raquel Sofia Macedo dos Santos

F.1 “Steamboat Willie”, por Walt Disney (1928)
F.2 “The Princess and the Frog”, por Walt Disney (2009)
F.3 “A Cat in Paris”, de Jean-Loup Feliucioli & Alain Gagnol, por Folimage (2009)
F.4 “Spirited Away”, de Hayao Miyazaki, por Studio Ghibilí (2001)
F.5 “Desassossego”, por Sardinha em Lata (2010)
F.6 “Hotel Transylvania”, por Sony Pictures Animation (2012)
F.7 “Brave”, por Pixar (2012)
F.8 “The Blue Umbrella”, por Walt Disney (2013)
F.9 “Paranorman”, por Laika (2012)
F.10 “Rabbit and Deer”, por Péter Vácz (2012)
F.11 “Paperman”, por Walt Disney (2012)
F.12 “Paths of Hate”, por Damian Nenow (2010)

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Setting Change in Motion
The Effectiveness of Animation in Social Marketing

Brian J. Larson

Abstract

Current poor economic conditions and political and social strife indicate a growing need for social marketing in communities around the world, and animation and other graphic imagery are specifically tailored to deliver important messages that promote positive social change. It is the purpose of this paper to demonstrate how animation, more so than live action, can effectively entertain, educate and inspire action across cultural, political and ethnic divides and aid in the creation of memorable and effective PSAs, acting as a catalyst for positive social change. By taking advantage of the inherent qualities of animation, social marketing can broaden its scope to address serious health, education and safety issues to populations previously ignored by similar campaigns that used film [video] to deliver a much needed message. Outlining how animation works on human perception, how it wins empathy in the viewership, and how it is balanced against available concepts of ‘reality’ I will establish animation as an effective tool in social marketing. Further, I will use interviews with John Canemaker, noted animation author, historian and professor and Jim Hardison, co-founder of Character, Inc. an advertising branding think-tank to establish the viability of animation and spokes-character qualities in social marketing. In-depth case studies of existing animated PSAs will offer conclusive evidence of their power and memorable qualities.
The power of imagery has advanced human progress since the introduction of printed material in the fifteenth century. When considering the advent of the moving image, this argument is compounded. People are fascinated by the moving image, and more importantly, their lives are often changed by the simple projection of these images on to a screen. On television, it is impossible to ignore the success of The Simpsons, which has been on the air since 1989 and South Park, which began airing in 1992. It is equally impossible to ignore Pixar’s success with the last 5 theatrical releases earning over 1 Billion dollars worldwide (boxofficemojo). While box office success does not directly equate to the overall success or effectiveness of an art form, it points to the global acceptance and popularity of animation as a way of delivering a message. However, the box office success of animation has carried over into other markets as well, particularly the use of animation to deliver messages of social concern, bringing relief and information to countless communities worldwide. An early proponent of animation in the delivery of socially relevant messages was UNICEF [The United Nations Children’s Fund] in the 1980s. William Hetzer, former chief of the Radio, Television and Film Section of the New York division of UNICEF states that a key part of UNICEF’s goal in increasing development and behavioral change is “raising the world’s awareness and mobilizing its resources in favor of children” [2]. In recent years, “UNICEF has begun to utilize a new medium of communication to convey these important messages—with great results. That medium is animation” [2]. This type of business model is defined by several terms. The underlying concept here is social marketing, a term that was introduced in 1971 as the application of principles of commercial marketing designed to influence the behavior of people for their own welfare [Alvarado 8]. The concept is also known as cause marketing or communication development, and includes the use of public service announcements [PSAs] and films. The benefits of public communication campaigns are often driven by reform efforts in an attempt to make society better as defined by emerging social values. [Dozier 231]. More specifically, the use of animation and graphic novels in these types of messages is defined as entertainment-education, “the process of purposely designing and implementing a media message to both entertain and educate to increase audience members’ knowledge about an educational issue, create favorable attitudes, and change overt behavior” [Singhal & Rogers 343]. But organizations like UNICEF are currently in the minority regarding the use of animation in public communications campaigns; its use simply isn’t as widespread as it should be. This has a direct result in the effectiveness of the intended messages reaching the proper audience. The power of animation is universal, one need look no further than Mickey Mouse or Bugs Bunny to understand how an animated image can be accepted, even loved, in virtually any culture around the globe. But is it within the scope of animation to educate, or is it simply a means of entertainment? Walt Disney, who many consider to be the father of American animation, has professed the use of animation in education from the beginning. Charles Solomon quotes Mr. Disney in Animation’s Recent Past as saying “the three r’s are basic, but their advancement by means of the motion picture screen will give more people in this world an opportunity to learn. Pictures can make both teaching and learning a pleasure. And educators can argue that when a student has begun to learn and like it, half the problem is solved” [5]. Roy Disney, nephew of Walt, explains that it is the specific magic of animation that makes it such a tremendous learning tool: “Animation can not only portray anything, but can do so in such a way as to grab the attention of anyone of any age, of any culture here on earth. The ability of animation to universally communicate even the most abstract of concepts is what makes it such an invaluable tool” [vi]. The impact of animation on social concerns is strongest when it entertains as well as educates [McBean and McKee 12]. How certain imagery has the power to affect such change is a lengthy discussion. However, the phenomenon is not unique to animation, graphic novels and other forms of sequential storytelling hold the same power. In Understanding Comics, The Invisible Art, author Scott McCloud posits the question “Why would anyone, young or old, respond to a cartoon as much or more than a realistic image?” [McCloud 31]. The answer, he explains comes in the universality of cartoon imagery; the more realistic a face, for example, the more we see it as the face of another, but the more cartoonish or abstracted, we tend to see ourselves [36].
There is a growing need for social marketing in communities around the world. Topics such as immunization, child abuse, salt iodization, safe motherhood, AIDS, breastfeeding and education are essential to human health and development, yet remain hidden from those who most desperately need them. Almost 13 million children in the developing world die each year from preventable causes [Hetzer 1]. Current PSAs and other marketing campaigns are making progress in effecting social change, but they cannot reach their full potential without the universal appeal of animation in the message. Through the work of UNICEF, the Ad Council, and countless independent productions, animation has increased awareness and strengthened causes for decades. Animator John Canemaker created the Break the Silence-Kids Against Child Abuse campaign that explained the sensitive issue of child abuse. In Mexico, deaths from diarrheal dehydration were halved in three years thanks in part to an effective campaign that used animated spots on television [Disney X]. Several defining qualities of animation and graphic novels strongly suggest animation is uniquely tailored to deliver important messages [PSAs] that promote positive social change.

The effectiveness of a PSA can be defined by its ability to reach its intended audience, open minds to new ideas, compel people to watch, remain attentive and retain the message. Certainly some success must be credited to broader campaigns as opposed to individual single-shot message PSAs and further distinction given to campaigns supported by print media, graphic novels or other storytelling devices. According to the Ad Council, PSAs are “an effective means of communication and education as they increase awareness, reinforce positive beliefs, intensify personal concern and move people to action” [ad council.org]. In an article from 2000, authors Renee Bator and Robert Cialdini state that the “advantage of using PSAs to promote prosocial behavior is due in part to their ability to effectively and repeatedly penetrate a large target population, with the possibility of relying on highly respected sources as spokespersons.” [Bator & Cialdini. 527]. Certainly there are factors in determining the effectiveness or success of a PSA that fall outside the scope of animation techniques including the content or message, sufficient pre-campaign testing with specific focus groups, proper distribution channels and frequency of message delivery, but these qualities will not be discussed for the purpose of this paper.

Currently, there are over one billion television sets worldwide with an estimated audience up to four times this number. Clearly television is becoming the most widespread source of visual information [McBean & McKee 10]. Information on the increased use of the Internet is insufficient at this time. It appears, then, that creating and promoting positive social change is a communication problem as much as it is a health or safety issue. In the 1980s, UNICEF used animated films at community viewing centers in Nepal and found them to be extremely useful in explaining health information to non-literate, rural audiences. In fact, the Nepalese audiences would talk for weeks afterwards about the issues portrayed in the film [McBean & McKee 10]. It is also acknowledged that there are many parts of the world where television and film are years away from being viable, regular means of distributing information, however, this does not diminish the effectiveness for those with reliable access. Technology provides an opportunity to use entertainment to influence countries, communities and individuals to take actions to improve their society [Feek 17]. There is a growing and substantial need for a method of communication that can distribute knowledge as well as entertain in a way that suggests, encourages and reinforces changes in individual behavior and social norms. Government agencies, non-profit organizations and for-profit companies responsible for corporate philanthropy all use social marketing [Kotler 12-14]. Most studies focus on PSAs as an element of a broader advertising campaign and rarely appear in studies of their own.

While there are no ‘established’ rules or elements that ultimately determine the effectiveness of a PSA, several studies agree on multiple important factors that must be present in order for attitude change and subsequent social improvement to be reached. Among them, the “public must have contact with the message and, having been exposed to it, must pay attention to it, like it, understand and learn from its content, agree with it, store the information and be able to retrieve it later, and make decisions based on it” [Bator & Cialdini 529]. Animation contains many attributes that make it ideally suited for use in social marketing. This is said to occur by the following sequence:
Attention > Comprehension > Elaboration > Integration > Enduring Attitude Change [Petty & Cacioppo 1981] If popularity is measured by the ubiquitous use of an image, the popularity of cartoon characters is solid and as established as any art form. Examples and instances of the use of characters are too numerous to examine in detail; however, they can range from images of Calvin from Bill Watterson’s classic comic strip Calvin and Hobbes adorning the rear windows of vehicles across the United States, to the ever-present image of Felix the Cat, embellishing anything from t-shirts to bumper stickers to tattoos. Public service advertising has been forever changed because of the successful use of Smokey Bear in the ongoing Ad Council campaign. Smokey’s humble beginnings actually began as a deer. In 1944 Disney used the image of a deer in a forest fire prevention campaign poster. The success of this illustrated poster was immediate and proved an animal could be used as a fire prevention symbol, but Smokey was chosen because Bambi was the property of the Disney Company. Smokey Bear has since become the longest running campaign in Ad Council history and has reduced the number of acres lost annually to forest fires from an estimated 22 million to 4 million [ad council.org]. The use of animation in advertising in not new, however, using an animated ‘spokes-character’ over a living, breathing person or animal has changed the way advertising is perceived.

According to Rachel Carnegie, a former consultant to UNICEF, “research has shown that animation appeals across generations. If the product is well researched and the issues convincingly presented, adults find it a credible and entertaining source of ideas. In the animated characters, children can recognize their own experiences and find their own voices” [Carnegie 45]. The cartoon medium is a vacuum into which our identity and awareness is pulled, an empty shell that we inhabit which enables us to travel to another realm. We don’t just observe the animated image; we become it [McCloud 36]. While several factors are needed for a PSA to be considered effective, the credibility of the person delivering the message is critical. The elements required to create behavioral change include enabling a feeling of empowerment and motivation to act. The popularity of animation offers suitable vehicles for undertaking such ambitious objectives [Carnegie 47].

Endearing animated characters speak for the rights of the target audience, most often children, and give them a voice, while using their innate charms to steal in to their hearts and minds and start to work on them from within [Carnegie 45]. It is the popularity of animated characters that establishes them as viable, even preferred spokes-characters for issues regarding positive social change. Traditionally, hand-drawn characters were the predominant type of animation used, however, with the great strides in computer generated animation and characters in recent years, more realistic or not-quite-realistic characters are becoming more commonplace, and may blur the distinction between animated spokes-characters and live-action spokespersons. The frequent use of spokespersons in advertising campaigns suggests their universal appeal and effectiveness. Using celebrities to endorse or promote a product is a popular and growing trend. According to a survey by Video Storyboard Tests, Inc. more television viewers today have positive feelings about celebrity spokespersons than in 1987, and more than twice as many viewers suggested that a celebrity spokesperson made the message more memorable [Tom, et. Al 45] Certainly the willingness of the target audience to listen, how generally desirable the behavior is to begin with, and how well and often the message is presented, will factor in the determination of an effective campaign. One outstanding factor that must be considered is the credibility of the spokesperson delivering the message. It is also recognized that the terms ‘spokesperson’ and ‘spokes-character’ embody many different presentation formats. These characters are used in ‘vignettes’ to tell their stories, as central presenters, as characters in a story [a slice-of-life approach] and in a ‘demonstration’ capacity [Novelli 4]. In a message-heavy society, issues with low or non-existent viewer involvement may have limited impact, and can benefit from a highly credible source with positive appeal [Pratkanis & Greenwald 329]. Does this suggest that animated characters all have an implicit positive quality? The effectiveness of a campaign, therefore, relies not only on how the message is delivered, but who is delivering it. Similar research points out that key factors for strong spokespeople in social marketing include expertise, trustworthiness and empathy. The perceived good reputation of the messenger brings with it the “perceptions of trustworthiness and honesty while a lack of
perceived credibility brings with it a lack of trust and more risk for the buyer” an idea that can be applied to both consumer products and social issues [O’Shaughnessy & O’Shaughnessy 146]. Non-living characters [in this case, animated characters] are gaining in popularity and usage, and offer many advantages over live action celebrities. Authors George McBean and Neill McKee argue that animated characters can create communications symbols that can be identified regionally or even worldwide [11]. All animation is a symbol, and is perceived as such from an early age, and symbols carry meaning in a way that direct representation cannot.

For the purpose of this paper, spokes-characters are differentiated from spokespeople and are considered animated characters either designed specifically for the use in public service campaigns, i.e. Maximo, developed by Disney to promote health awareness in Ecuador, and established characters originally designed for use in entertainment venues such as Daffy Duck, who was later used to promote the preservation of America’s wetlands. The use of animated characters from entertainment programs to represent pro-social ideas may result in a memorable and enjoyable advertisement, but the extension of the credibility of the character associated with the PSA back to the entertainment program may not occur. A third category, the animated spokes-characters designed specifically for a product such as Tony the Tiger or The Geico Gecko, is to be considered and recognized for brand recognition, however such characters’ credibility on social issues has not been sufficiently studied and there remains a link between them as individuals and corporate icons that remains to be examined. Spokes-characters are having a positive effect on consumers as well. Research indicates, “consumers like spokes-characters and have even expressed their trust and respect for them” [Callcott 26]. Consumers seem to evaluate characters and their qualities the same way they do people, and often people infer characteristics of trust from observable qualities of the characters.

In a study by Shannon Elise Muir on the effects of animated PSAs designed for children on adults, animated spots focusing on social ideas showed better results when compared to live-action public service announcements and animated consumer product advertisements [77]. With spokes-characters established as trustworthy, the specific qualities of animation are well suited to deliver an effective message. Animated spokes-characters play on animation’s inherent ability to entertain, offer a point of emotional connection to the target audience and compel people to watch while at the same time sustaining their attention. The specific goal of any social marketing campaign or PSA is most often broad based and involves many factors, however, one obvious primary goal is to create long-term behavior change. Researchers have found that once an individual is exposed to a message, it is how the individual processes the information that determines the effectiveness and sustainability of the message [Bator & Cialdini 330]. In order for the message to be processed so as to create behavior change, several factors must be present, including the credibility, attractiveness and vividness of the source of the message. Vivid messages are found to be more personally meaningful, more emotionally arousing and as a result more influential. Vivid information is likely to draw and hold our attention and to stimulate the imagination to the extent that it meets three criteria: 1) it grabs us emotionally, 2) it is specific and triggers our imagination, and 3) it is immediate in a sensory, temporal, or spatial way. Animation possesses the qualities needed in a successful PSA, as demonstrated by continued box-office success and prolonged effectiveness in advertising. Animation’s effectiveness includes the ability to convey messages more succinctly and remain fresh after repeated viewing.

If the desired outcome is more ‘positive’ behavior, the target audience must first be motivated. The animated film, with its high entertainment value has a great potential to do this [McBean & McKee. 14]. Much of the effectiveness of animation comes from its’ use of animated spokes-characters [in addition to storytelling qualities]. Character, Inc., a production and marketing firm in Portland, Oregon, designs and refines animated spokes-characters for popular brands and has been instrumental in the development of characters for Chrysler, McDonald’s, Pringles and Cheerios. Their goal is to enhance brand awareness and attitude through the development and use of animated spokes-characters. Founder David Altschull was the producer for the highly successful animated California Raisins commercials in the 1980s and is a frequent speaker at corporate and industry events. According to Jim Hardison, Creative Director at Character, Inc., the pri-
mary benefits of an animated spokes-character over a live action spokes-character are longevity and control.

Longevity addresses the potential problem of a limited 'shelf-life' of live action characters. Any live action spokesperson will age and change, potentially making them less suited for or capable of playing their role for a brand. This results in the need to replace the spokesperson—which can disrupt the connection established between the brand and the audience. The size of the disruption is often proportional to the emotional investment in the specific spokesperson. Animated spokes-characters do not have to age or change in any way. They can remain unchanged for decades, continually reinforcing the identity of the brand in exactly the same way. There are, for example, brand characters who are now over 100 years old and still going strong. The Quaker Oats Quaker and Bertie Bassett for Bassett’s licorice Allsorts are both examples of characters that have endured for over a century. Both characters have undergone changes and redesigns, but always by choice rather than necessity [Hardison]. Additionally, spokes-characters offer an element of control. As a spokesperson cements their connection with the audience, they begin to acquire a degree of leverage/power that can result in negative consequences for the brand. First, they may take advantage of the fact that they are closely identified with the brand in order to demand increased compensation or other benefits. Second, if they exhibit undesirable behaviors, this can bring negative attention to the brand or call into question the qualities they were chosen to represent in the brand. An animated spokes-character generates neither of these negative outcomes. [Hardison]. This is corroborated by Gail Tom who concludes that a creative marketer can control their spokes-characters’ development by giving them characteristics that are both effective with the target audience and congruent with desirable characteristics of the cause [Tom, et. Al 46]. From the perspective of a non-profit organization, the potential diminished credibility inherent in any animated spokes-character is outweighed by the benefit of the character’s recognition. By using an animated spokes-character, the advertiser may be spared the stresses of a live-action personality, such as making poor personal choices that could reflect badly on the organization.

While animation has long had ties to education, it is seen primarily as a form of entertainment. Story and character development allow for a more personal investment in a message. Animated film characters can create communications symbols that can be identified regionally or worldwide, such as Mickey Mouse, Daffy Duck or Yogi Bear. It is this association that makes animation so effective in delivering an important message. In addition to the demonstrated attributes of spokes-characters, animation in PSAs uses its entertainment value to enhance or win empathy in viewership. According to Hardison, there is evidence to suggest that perceiving a brand, or in the case of social marketing, a cause, communication as a story rather than simply an advertisement changes both the part of the brain that processes the information and the way in which the information is processed. The communication consequently affects the viewer on a more emotional rather than a strictly rational level [Hardison]. Given the importance of an emotional connection in social marketing, animation becomes an important vehicle. Research has shown that the most effective and sustained communication occurs when audiences actively engage with the issues, storyline and characters, not when they are passive recipients of a one-way flow of information [Carnegie 46]. Where the rational message may be superficially and conditionally persuasive, the emotional message is perceived on a more empathic level—the viewer identifies with the protagonist of the story, with the struggles that character is experiencing, and consequently feels an emotional connection to the character. Well-crafted animated characters functioning within well-crafted stories have a high potential to generate sympathetic or empathetic responses from the audience [Hardison]. While live action films have many effective properties, animation is better suited to generate an emotional impact.

Sensitive issues have long been difficult to communicate because of the highly charged emotional subject matter. Animation, however, is perhaps most powerful when it addresses these concerns head on. According to John Canemaker, noted animation author, historian and lecturer, one of the most powerful qualities of animation is the visualization of emotions, emotional states, and the personification of inner thoughts. He asserts that the real strength of animation to communicate difficult subjects is that “even the most didactic of films can be used as a springboard
for further discussion. In fact, many teachers find animation to be a wonderful supplement to their regular educational materials.” [23]. In an interview conducted with Mr. Canemaker, he states that animation can personify thoughts and emotions. It can literally become an emotion or make a character out of feelings. I am thinking of the way the Hubley’s portrayed anger as a growling lion within the belly of a child that sometimes roars out of the mouth, creates havoc before dissipating. In my film THE MOON AND THE SON, I turn photographs of a family into individual abstract forms and colors to indicate their psychological make-up and interactions with each other. By using symbols such as this, animation can create its own reality separate from live-action. In many cases, a symbolic design plus expressive animation can evoke a strong emotion response from audiences. [Canemaker].

Through entertainment animation can appeal to the emotions that drive people’s decisions and strike at the value systems upon which their lives are built. Roy Disney, nephew to Walt Disney, draws a similar conclusion: Indeed, this is the real strength of animation. It can tackle any subject. It can take us into the single cell of an amoeba or out into outer space. It can give us talking mice or wooden boys, flying dragons or singing mermaids. It can show the wonder of earth’s creation, or the new potential that lies in each and every one of us. Animation can not only portray anything, it can do so in such a way as to grab the attention of anyone of any age, of any culture here on earth.” [vi].

One outstanding example of the use of animation and an animated spokes-character in Public Service Announcements is the Meena Communication Initiative. Meena is the heroine of an animated series of PSAs and short films developed by UNICEF that are aimed at promoting the status of the girl child in South Asia. Its objective, according to Mira Aghi, primary researcher on the project, was to highlight the problems faced by girls in South Asia. The issues had to be raised, discussed and dealt with in a way that society at large could recognize, promoting an understanding that the predominant social attitudes hinder the development of girls. Through formative research and design, the Meena PSAs have improved the lives of millions of girls growing up in South Asia, and have shown that animation can be a catalyst for behavior change [Aghi 37]. The film’s characters, backgrounds and stories were designed so as to strike a common chord of cultural identity with people in Bangladesh, India, Pakistan and Nepal [Aghi 38]. Because of the wide heterogeneous population, and the need for every girl in the region to relate to her and the problems she confronts, Meena’s look was kept close to reality to avoid her being perceived as a “supergirl”. The series maintained a balance between weighty social issues and entertaining stories that appeal to both children and adults. Particular care was taken to prevent the films from becoming overloaded with messages, but at the same time to ensure that the seriousness of the issue was not treated flippantly [Aghi 39]. The project turned to animation as the best vehicle to achieve these goals and affect the desired change in behavior. Program Director Neil McKee explains that the initiative “aims to develop a symbol of an empowered girl who, through creative and exciting stories, will promote solutions to social problems in an appealing, entertaining and provocative way.” [52].

According to McKee, animation is the medium through which a set of characters and stories come to life, because animated films “can capture the attention and imagination of audiences and provide a creative focus” [McKee 52].

Through the animated characters, children recognize their own experiences and find their own voices. As a little girl in a Dhaka slum exclaimed, “I want to be like Meena. I want to go to school too.” Through Meena’s story, this little girl had been able to articulate her own aspirations and identify her rights. Likewise, parents become engaged with the issues and characters and review their own attitudes towards their daughters [awn.com]. Research has shown that animation in the Meena films is a powerful and appealing medium for communicating ideas, containing the ability to teach as well as delight. Through a detailed formative research process, animation was used to address sensitive gender issues in an open and non-threatening way. This has proven to enlighten without alienating the target audience. Animation engages the people with the story, and thereby conveys the ideas through the process of identification with the characters and events [Aghi 42]. By taking advantage of the entertainment aspect of animation, fun and seriousness are balanced to ensure the films are not overloaded with messages, yet still carry the necessary credibility. One of the most successful campaigns in the history of the Ad
Council was the series of animated ads featuring McGruff the Crime Dog™. In 1979 the National Crime Prevention Council and the Ad Council introduced McGruff the Crime Dog™ to the nation and began encouraging Americans to help “Take a Bite out of Crime™.” Today, more than 93% of children recognize the icon that provides safety tips for adults and kids. Over the years, the Crime Prevention campaign has helped teach kids, teens, and adults about violence and drugs, and the PSAs have inspired all citizens to get involved in building safer, more caring communities.

The effectiveness of the ad lies in the use of the animated spokes-character, McGruff. The use of a character suggests to the audience, on an unconscious level, that a brand communication is a story because characters are a recognizable story cue. This further supports the evidence suggesting that perceiving a brand communication as a story rather than simply an advertisement changes both the part of the brain that processes the information and the way in which the information is processed. The communication consequently affects the viewer on a more emotional rather than a strictly rational level. According to Jim Hardison of Character, Inc. “While there is a strong perception that it is the physical characteristics of a spokes character that makes the character relatable to the audience, [sic] what audiences primarily relate to is the sense of humanity in a character. A character does not have to be human to convey this sense of humanity—but a character does need to convey some sense of conflict or struggle—either in the story that motivates it or through its physical design”. The design of McGruff immediately establishes him as an authority as he ‘looks’ like a police officer or detective. His distinctive voice is rough, suggesting toughness and a history: this plays in to the ‘story’ concept as well. Animated characters can help avoid excluding audience segments by being less specific about details of a character’s gender, race or ethnicity. For example, many brands choosing anthropomorphized animals and objects to avoid the limits of specific races or ethnicities. Such choices can cause their own problems—for example, some cultures have taboos regarding certain animals that make them inappropriate for particular categories of products. Since the McGruff ad was played solely for North American audiences, this was not a concern. Hardison suggests that a specific, identifiable age is important to clear characterization, but this is not likely to limit appeal so as long as the character’s age is appropriate to his or her role in the story. McGruff’s age is never mentioned, and is only suggested by the tone of his voice and his demeanor. These design qualities serve to establish authority more than familiarization or peer appeal. The PSA uses animation to appeal to the emotions of the viewer and deals with the subject of crime and drug use in entertaining and educational ways. The design of the character has a traditional, Disney-esque feel, establishing familiarity and associating McGruff to the most successful animation properties: the use of simple colors, a modified and anthropomorphized animal, and the character’s scale. The design’s direct connection to popular crime detectives also establishes McGruff as an entertainment property. Additionally, McGruff is engaging, active, smart and fun to be around. This gives weight to what he has to say and does so in a non-threatening manner and without moralizing. McGruff is often seen with live-action children, making a connection to the target audience and giving him a high level of credibility, trust and empathy. McGruff is meant to soften and personalize a subject most often associated with children’s fears, the presence of crime. The highly charged subject of crime [and drugs] is tied to the emotions associated with safety and the protection of loved ones. A 1992 survey of responses indicated that the McGruff campaign had continued to gain in popularity and impact during the previous decade, likely as a result of keeping a focused vision of the popular McGruff character, while simultaneously delivering distinct messages about changing crime patterns and trends [O’Keefe & Reid-Martinez 275].

In countries with rich storytelling traditions, folktales with moral messages have been from early times an integral part of people’s informal education. Because of its strong storytelling aspect, animation has been used from its inception as an educational tool. There is clear evidence that entertainment-education programs provide an effective counter to entertainment-boredom programs. [Singhal & Rogers 12]. In fact, studies conducted by the US military during World War II showed that troops learned difficult concepts faster, more easily and more enjoyably through animated films. The armed services commissioned thousands of
animated training films from the Hollywood studios during the war years. [Solomon 5]. John Canemaker portends that “animation’s role is not just to entertain. It also has great power as a teaching tool. Animation has the unique ability to take on difficult, complex matters in imaginative ways that are beyond the capability of live action.” [23].

Animation’s direct line to emotion and education makes it a more memorable and thereby effective form of advertising. Animation has the ability to create powerful imagery that directly affects the emotional state of the viewer. One way of developing meaningful symbolism [a key element in memory retention] is Schwartz’s resonance model. He argues that the best campaigns are those that resonate with the target audience and those that tap the relevant experiential feelings of the target audience. [O’Shaughnessy & O’Shaughnessy 199]. This taps into the strongest aspect of animation, its ability to depict emotions, thoughts and feelings through the use of color, characterization, style and movement. Additionally, animation has the ability to directly associate these aspects with the viewer.

When an animated property engages the imagination of the viewer it establishes a connection to the viewer on multiple levels, as an entertaining story and as an educational message. When people act on this connection, along with the trust and authority given an animated spokes-character, it is possible to affect social change. This idea is echoed by authors Greene and Reber, who state “It is because animation imparts life, interest, spirit, motion and activity that we believe the industry truly has the power to make tremendous progress for [people] in the years to come. We believe that animation can be an important catalyst – a global communications medium that can help make the world a better place for our children. [Preface].

There is no single answer when looking for ways to affect positive social change. There are, however, options that can make the dissemination of the message more effective. Animation is more than simply a form of entertainment, it is also an ambassador of information to widely varied countries and cultures. When used in public service advertising, animation can become a familiar, inviting, trustworthy avenue into positive change. Presenting an idea in an environment different from the everyday world and less commonly seen than live action messages captures something in the imagination and gives the viewer more of an incentive to retain the message and act upon it. Initial research suggests that advertisements for either consumer products or social ideas were better received when animation was used to convey the message. The communications revolution has given us the capacity to reach the world’s developing nations and poor populations, even as social and economic exclusion continues to be the chief characteristic of most national and global economic systems. This imposes an ethical responsibility on communicators; to use the tools of the revolution, including animation, to help relieve suffering and alleviate poverty. [Greene & Reber Preface]. Cartoons should be part of our response to the global trauma and suffering. Surely we can stock our relief supplies with animated shorts that can help people heal and allow them to laugh and feel and think again.

Bibliography


Re-reading String for Educating Interactive Media Design Students in the Perspective of Designing Futuristic Interfaces

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Abstract
In this paper, we address the current status of fictional interfaces in movies and their effects on population and developing technologies. While they carry no such intention, the unrealistic interaction scenes in the movies affect popular tendencies and therefore the technologic developments. This study is on the application of the “re-reading model in design”, a design practice we have used in previous studies, on an everyday instrument, “string” with the aim of leading the senior interactive media design students to design more realistic interfaces without sacrificing from impressiveness.

Keywords
human-computer interface; teaching/learning strategies; virtual reality.

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1. Introduction
The futuristic interfaces designed for fiction movies hold many clues for what we may see in actual future interfaces. Yet, we examine these interfaces to evolve into more detailed and complex forms in each popular movie as opposed to researchers advocating simpler and more intuitive interfaces in real life (Norman, 2010; Saffer, 2009). This conscious complexity in the movies has the goals of expressing the genius and mastery of the protagonist and enchanting the viewer with such talent. On the contrary, in real life the user isn’t, or shouldn’t be expected to be as skillful and experienced. Therefore this complexity tendency of movie interfaces causes us to have an unrealistic projection of the future (Walt, 2010).

It is more or less undeniable that the gestural user interfaces (GI’s) are going to be a significant part of the future human life. The concept of gestural interaction (GI) in information technologies emerged in the 1980’s (Buxton, 2011). Today, examples of gestural interfaces are available for users in many consumer electronics products through multi-touch screens, tangible devices and motion capturing. However, current systems are quite basic applications in terms of their use of limited input gestures. Current applications based on body gestures, such as entertainment applications designed for Microsoft’s Kinect, employ a limited number of major gestural input commands, although the current technology is adequate for identifying complicated movements, and the user’s body is capable of relating a vast number of gestures. This situation requires the users to memorize the exact determined input gestures instead of interacting freely.

GI is still an experimental method of interaction (Norman, 2010; Buxton, 2011; Carroll, 1997) and needs to be enhanced for a richer and more effective user experience (Saffer, 2009). Compared with the mouse-based interaction, one of the major handicaps of GI is its sophisticated nature, relying almost exclusively on the user’s perceptual and cognitive skills (Duke, 1999). Still, some of the recently developing products tend to require even more complex interactions in order to fulfill a wider range of operations. On the contrary, current studies claim that GI developers should rather take human nature into consideration while determining gestures. Furthermore, usability analyses on existing designs exposed that movements should require the least physical effort possible and even, where possible, interaction with the devices should be unconscious, meaning they should operate subtly while the users are performing every day actions (Yonck, 2010; Norman, 2010).

The future possibilities of GI, while still unclear, are promising for its potential to enhance the human-computer interaction through a new dimension, leading to the development of superior technologies (Saffer, 2009). As the industry and designers acquire further experience in applying these systems, application employing GI methods will become widespread in end user products in the coming years. But we believe that it is the users that need to get used to frequent interaction with GI devices for them to become common. User friendliness of the products and acquaintance of the users are the primary prerequisites for such a development.

In many futuristic interface examples we see in movies the protagonist successfully completes many complex operations with pre-learnt knowledge such as in GI’s (Johnny Mnemonic, Minority Report), eye tracking user interfaces (UI’s) (Iron Man), voice activated UI’s (Star Trek), holographic UI’s (Avatar), transparent UI’s (Total Recall 2012), adaptive UI’s. Again we can observe the lack of feedback and predictability elements, together with physically exhausting interaction concepts. Such interfaces are called “audience interfaces” instead of user interfaces (Nielsen, 2006).

We can claim such unrealism, or usability mistakes of movie interfaces are not important as long as they fulfill the entertainment criteria. Eventually the way these interfaces and the scenes of their use are designed to serve the purposes of visibility, visual impressiveness and expression of the protagonists’ talents. Likewise, we can overlook the technological inapplicability issues and see these as elements that push the technology market forward. Yet the lack of realism they have on the physical and cognitive ergonomics side brings up two major problems: Firstly they mislead the market demand into a visually satisfying but unrealistic direction and thus create a significant waste of research funds, to which we can exemplify Minority Report’s interface designer John Underkoffler’s efforts to launch the same interface to the market. Secondly they mislead the user beliefs as well; making them think
working through such complex interfaces is a piece of cake and despise themselves for their lack of talent as soon as they get to interact with an unusual interface.

So, do these movie scenes of futuristic interactions, despite usually being designed by interface designers, have to be useless in order to be impressive? The answer would be yes, if we recognize these fictional interfaces as a part of the distant future, since it is commonly accepted that interface designs based on today’s realistic technology are unimpressive. Yet we choose to believe that interfaces which satisfy the viewer visually and also illuminate the future of real life interfaces can be designed with the inspiration from timeless applications that have always been in our lives.

Yet, we know for a fact that current interaction design education doesn’t encourage designers to create extremely futuristic and visually satisfying interface designs. We also believe that the existing inapplicable interface concepts in the movies are also caused by this fact. We think we have to take a new approach for this goal.

Obviously, in the light of the specifications above, our main perspective includes the movies that rely heavily on computer generated animation (CGA) such as Avatar and District 9. We believe that our concerns stated above will perish if the designers lead the process right while designing futuristic interfaces for movies.

Departing from this suggestion, this paper questions what training process should the interface designer fulfill in order to (1) make better designs all over, (2) giving the viewer a more realistic perspective as to what the future of interfaces might hold, (3) not sacrifice and even improve the impressiveness factor over the viewer while doing so.

2. Re-Reading Model in Design for Training Design Students

We consider “re-reading in design” that we developed in our earlier studies, as an effective model for achieving the goal above. Within a series of researches we conducted since 2001, we have suggested taking inspiration from formal solutions of past cultures might be a fruitful way to develop innovative ideas in the field of interactive media design. We name this method as “re-reading in design”. In order to prove our hypothesis we have analyzed this method over Traditional Turkish Shadow Play (Ozcan, 2002), Turkish Miniature Art (Ozcan, 2005) and Traditional Turkish Calligraphy (Unluer, 2010). We can claim that we have put forward a series of realistic sources of inspiration that will produce significant benefits to interactive media design.

In the first research on Turkish Shadow Play we encountered four different screen and viewing setups as “two sided viewing”, “playing without a screen”, “spatial viewing” and “interaction between the image and the actor”, and in the experimental studies we conducted with students, with the consideration of possible future technologies, we saw that unordinary design ideas may come out (Ozcan, 2002).

In the second research we applied on Traditional Turkish Miniature Art that we consider to be the ancestor of contemporary visual information design, we claimed that properties of this art such as “mapping”, “scaling”, “bonding diagrams”, “symbolization”, “framing”, “separation” and “representation of separate spatial and temporal features together” can be useful sources of inspiration. We asked the interactive media design students to exploit these sources of inspiration and build innovative information design ideas using contemporary technology and subjects without imitating the style of miniature. We got the conclusion that unusual design ideas can be achieved by the students using this method (Ozcan, 2005).

In our third study over Traditional Turkish Calligraphy, we took inspiration from the methods and philosophy of this art that focuses on full body use, for digital interaction and we have witnessed once again that innovative solutions can be obtained for gestural interfaces that allow the use of natural body movements (Ozcan, 2010).

In the light of the positive results we got out of the studies above that are based on “re-reading in design” method, we have the courage to use this method on other subjects that we need inspiration. Our studies have led us to believe that, not only cultural methods from the past, but also our daily life habits can prove to be resourceful in finding inspiration to develop realistic and relatively usable futuristic interface designs for movies. We believe
that an instrument we use with many different purposes, "string", which has not been studied previously in terms of interface design, can be a valid source of inspiration.

3. Significance of String in Perspective of Interface Design

Oxford dictionaries define string as; material consisting of threads of cotton, hemp, or other material twisted together to form a thin length; and tie as a piece of string, cord, or similar used for fastening or tying something.

The use of string with purposes such as hunting, pushing, pulling, fastening, lifting, carrying and climbing leads back to prehistoric periods. There have been findings regarding the use of string in Europe as early as 26,000 BC. First strings were natural plant fibers such as vines, followed by stronger strings made by twisting multiple fibers. It is not surprising that the string found ubiquitous use in such early periods, since it has many organic uses in nature that may have inspired the mankind. Our relationship with the string starts even before we’re born as it is the umbilical cord that ties us to the life. Through the ages the string has found extensive use in interacting with the environment and other people. We can see its traces from child plays to mechanisms and even to metaphors.

When we look at the reasons that cause the string take up so much space in our daily life, we can pin point several features of the string.

Bonding: With the use of the string, multiple objects can be fastened together as in a puppet, allowing the objects move separately if needed. The structure of the string that allows tying both conjuncts objects together without the need for any other material both provides the flexibility to move the objects and the mechanism to control them. The string can be increased in flexibility or rigidity depending to the length, material and number of fibers it has been made of.

A string is more flexible when compared to solid objects and when stretched it gains potential to start a movement. It allows rich interaction and manipulation and may return to its initial form after being manipulated.

Linearity: A string can be made into a line and when compared to a drawn line, it has volume, weight and texture that allows us to feel and manipulate its direction and form. This 3D structure of the string provides more space to think and discover with it.

Modality: We can create not only 2D geometric forms and shapes with the string but also spatial forms and structures that we can include movement and modify as needed. Throughout the history, many games have been invented that involves creating 3D shapes with the strings. Creating shapes with a string as a single modifiable line provides an efficient thinking process.

Knotting: A knot on a string also works as a mark as a dot on a line, but in a 3 dimensional context. While the knotting is not as simple as it may require complex hand movements, it has many different versions each of which serve a different purpose. Different knot types have been used as marks for various purposes such as calendar, measurement, counting etc. throughout the history.

Information design: Perhaps the most exciting uses of the string for us were the ones that involved all of the features above. Through the ages, many different information design solutions have been put out using the linearity, formalness and knotting features of the string. Perhaps the most commonly known example is put out by Incas; the Quipu that were used as a recording and time calculating tool. Consisting of multiple strings of various colors,
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4. Method
Re-reading the String

We think that re-reading the string, an instrument that the humans have used for many different and complex purposes since pre-historic ages, is an effective case for training senior interactive media design students in the perspective of interface designs of the future.

In order to understand the importance of the inspiration from string, we have to begin with observing its distinctive qualities we noted above:

In the light of the analysis above we believe that the use of string provides several advantages over any other sketching instrument (such as pen and paper or computer screen) in design thinking. For example, the knots on the strings help us comprehend the fact that a line is composed of dots that are not perceivable when drawn on a paper. There are many ways to interact with a string, various knots, knitting and textures can be achieved, it can combine with other strings to produce a thicker one or dissolve to thinner ones. It is possible to manipulate the form of a string continuously and easily with hands as opposed to a line on paper or screen. Again, the string is spatial while a line on screen or paper is planar. This renders the string more open to randomness. Creating a lines form on screen or paper is more or less a conscious action while the string may take unexpected and unintentional forms. While the paper and screen have their own advantages, such features of the string bring up a spatial added value when taking inspiration. Simply playing with a piece of string is an inspiring action both with its form and use. Therefore we consider re-reading the string can give many inspirational leads to interaction possibilities.

Therefore we consider design practices with the string can give many inspirational leads to interaction possibilities. With the re-reading study above, we’ve derived such a design practice study in order to identify these inspirational points.

Design Practices on String Derived with the Re-reading Method
With the perspective stated above; we consider two separate practices can be conducted in order to take inspiration from the string and help design students design better futuristic interfaces for movies. We name these practices as (1) awareness, (2) design scenario.

The awareness practice is important for the interactive media designers that are used to work with a computer or pen and paper to get familiar with working with strings. We believe that the result would be more effective should the student begin with exploring the added values of string prior to addressing the design problem of this paper.

We propose various steps for this awareness practice:
First of all, the student is supposed to explore the possibilities of exploiting the shifting form of the string in order to create a message with it. We believe this will help to achieve both a design constraint and an idea for a composition. Our goal in this unusual practice is to help the students not only have some interface ideas but also expand his idea generation capacity.

Exploring the string requires playing with it in different ways. The first study should be on seeing how strings can be controlled and modified. Without a predefined goal, the students should be given the opportunity to use and play with strings of different qualities (material, thickness, length). This practice aims to help the students explore various features of the string such as flexibility, transfiguration, tightness and how it can be separated into fibers.

After a brief exploration of interacting with a single string, a second similar study will be conducted with multiple strings in order to practice ties, weaves, nets and conjunctions. A final study
will be made with strings using additional helpful instruments (weights, objects that can provide pivot points, pulleys) to observe qualities such as lifting, fastening, friction, cutting and separating.

1. Creating forms within a grid system: Nails on a board give a good reference to stable objects that the strings can be tied to. With a grid system made of nails, the students create forms wrapping a string around them with the goal of gaining some form practice.

2. Restricting movement with strings: Tying strings to stable objects, the students use them as a movement restricting factor. They can also provide movement to an object such as by hanging from above and letting an object be cradled.

3. Separating space with strings: One can define random 2D spaces by shoving scattered strings over a surface.

4. Creating density: The strings can make up nets and braids to create a field of density. The students explore with numbers and thicknesses of strings to achieve various information structures.

5. Interacting strings with objects: By associating strings with other objects the students can identify diverse visualization techniques.

6. Gesturing with a string: The students can try out different hand gestures and trace them with a string in order to record them visually. By manipulating and editing these traces, a wide range of form study can be done.

7. Motion management: Groups of strings can be manipulated in various ways. The students try out different controlling techniques, as in controlling a puppet, by giving different forms to a bunch of strings.

8. Information with knots: With different knotting techniques, numbers and other information can be recorded on a single string. By creating normal, reverse, double, permanent and resolvable knots, complex info can be recorded and modified over a string.

We think that as a result of these practices, many inspirational points from string can be achieved to design fictional interfaces that allow many interactional possibilities for futuristic movies without conveying unrealistic or excessively complex methods.

In the second phase of practices, namely the design scenario, we are going to ask five interactive media design students to design a futuristic but technologically realistic and meaningful interface to be used in an animated movie with the inspiration from the string. In the design scenario we expect the students to use string’s following properties: Transfiguration, Separation/Conjunction, Knot/Marking and Fastening.

Yet again we are going to ask said properties to be used only in controls that are needed in the scenario for which the interface is designed. Therefore, the students are to predetermine which controls and other interactions can prove to add value to the fiction. We suggest the students put forward ideas on which interactions are meaningful or impressive for the viewer and which are needlessly complex or unidentifiable by the audience in the initial sketch of the scenario, to achieve our goal for a realistic interaction that will help enlighten the future.

According to this outline, the interactive media design student that we studied with have each written up an interface scenario for a fantasy or science fiction movie and moved on to the project process.
The device displays three main functions throughout the movie.

strings has been chosen as material for its flexibility and multipurpose to logically support the many functions that the staff contains, rules of interaction through the design process of the staff. In order he encounters. A control scenario has been created per protagonist navigate and travel in a fantastic world and fight any creature he encounters. A control scenario has been created per rules of interaction through the design process of the staff. In order to logically support the many functions that the staff contains, strings has been chosen as material for its flexibility and multipurpose use.

The device displays three main functions throughout the mov-

dimensional navigation tool. Each location that the explorer may travel to is represented by a string that shows the direction of that location along with an icon at its end that represents the location. These locations are classified in three classes. The ones that the explorer can battle for plunder, the ones that the explorer may take shelter and the ones that aren’t explored yet. The appearance of each string such as the direction it sticks out of the center, the height it reaches, its length, its curves and the number of knots on it, holds information on the location it represents and while this information is not quantitative, it helps the explorer to decide on which alternative path he may choose. To detail these appearance features of the strings further; its direction shows the direction of the location, the height it reaches shows the height of the location, its length shows the distance of the location, its curves show how rough is the path and the knots on it show the possible road blocks and enemies that the explorer may encounter.

In the animated movie, the explorer unfolds the coil on top of the staff by sticking it into the floor. In the first stage, he makes a sweeping gesture with his hand to deactivate the strings that are not in the scope of the direction on his mind and these strings fold back into the coil. In the second phase, he decides he is looking for a shelter and so he pulls one of the shelter icons so the rest of the alternatives deactivate themselves and go back into the foil. Next, he compares the paths of the shelters for their roughness and he eliminates the rougher ones with a sweeping gesture. Finally, he compares the encounters of the remaining paths and eliminates
the tougher ones and wraps the last remaining one over the knob of the staff in order to activate his selection. From there on the staff will guide the explorer while he travels to that destination. The wrapped string will take different forms to give clues about what the explorer should do next, such as moving slowly to the bottom as a progress bar to indicate how close the explorer is to his goal. The staff itself will change shapes and become tools that will help the explorer. One such occasion happens in the last scene of the animated movie, where the staff turns into a glider to provide transport to the explorer.

5. Results and Discussion
At the end of the process we believe we have achieved creative ideas that can bring light to the future of interaction even if they are based on imaginary/futuristic technologies and have little applicability as of today.

The interface design that resulted from our design practice are used for diverse functions that include security monitoring, hacking and data mining. The one that was selected for the animated movie, helps the protagonist to explore the environment in addition to transforming into a transport and a combat device. Within these functions the interface embodied many commands that can be resourceful for future entertainment interfaces. We evaluated these functions according to the features we have defined, in the perspective of futuristic and functionality factors. Our evaluation here will be defined with examples from the animated interface, since its detail level is better known to the reader:

Transfiguration: The fact that the form of the interface device can be changed according to the needed function is a solution to the problem of using a device of a single set ergonomic properties for various functions someone which are inappropriate or do not serve a purpose other than impressing the audience with visual effects. Also, most entertainment interface devices of today are designed in a static form and more often than not they are either used for inappropriate functions that don’t refer to the commands they give, or require additional devices such as driving wheels, weapons and musical instruments for every little separate function. Below picture shows the designed interface used for exploration and combat functions. This way the device becomes more impressive and gets more air in the movie in harmony with the scene without falling to redundant actions.

Separation/Conjunction: Most existing interface devices are decorated with lots of buttons and sticks to perform separate functions simultaneously. But as these extensions do not change according to the application they create physical and cognitive complexity in addition to taking up significant space even when not used, not to mention there are situations their numbers are considered not enough. The designer has designed an interface that can bring up additional control extensions by separating into thin fibers like a rope does, whenever necessary and recombine into a single body when additional extensions are not needed. Apart from addressing a problem in the current interfaces, this feature both provides better visibility and directivity for the audience and allows impressive visual effects.

Knot/Marking: The futuristic interface in the project produces signs and marks over its display and control extensions to define their functions according to the application used so that the control is more predictable and the learning curve is shorter. This makes more complex control layouts and functions more believable and easier to understand for the audience. This feature also addresses a problem in the current interface devices which have no predictability clues for each changing function and thus make the users need to memorize many complicated interactions for each application they use. This cognitive problem often causes the users to refrain from using unknown applications.

Fastening: With the inspiration from the string, we believe that physical interfaces can be designed to use the advantages of physical interaction with other objects apart from the users,
whereas current technological and productional problems limit such possibilities. Many interface devices connect to other digital devices only with 3rd party apparatus for tasks such as variable functions and battery charging. In this project, the chosen flexible materials allow the interface to be fixated on the ground, body parts, or other non-digital objects in order to identify them, carry them, and even use their stability thus give the interface new uses. This also allows the interface to be used in scenes of the animated movie without takingthe main focus and replacing some other instruments that the protagonist needs throughout his adventures.

6. Conclusion

The subject of the study has been useful not only for designing impressive and realistic interfaces for futuristic movies, but also for shedding light upon functional possibilities on future interfaces. We believe it is a positive step towards overcoming current restrictions of interface technologies with the use of unusual materials. In the light of this study, we can foresee that the future of interface device technologies will tend to have variable functions and universal compatibility.

The string which is an instrument the humanity has been interacting for ages and still being used in many diverse areas in this age of technology can provide inspirational points for future interfaces beyond expectations. Aside from the fact that people are familiar with the string due to its uses in daily life, its properties bring up various functions that need to be further explored. In this study we chose to inspire from the most basic attributes of the string, but it has many other and more complex uses out there that can provide novel outcomes, waiting to be explored.

Most significant outcomes of the projects developed with the inspiration of string is cognitive, physical and ergonomic adaptability, which already are some of the most used properties of the string throughout the history. The futuristic requirements of a fictional movie allow us to look for solutions in unconventional areas for problems, in this case, of interfaces that provide control for multiple applications. The string, with its many different uses in daily life, gives us a good point of inspiration for such purpose. Another significant novelty is beneath the outcomes in the compatibility section. We believe that, once the flexible structure of the string that we interact with other objects with ease, is applied to physical interfaces, it will bring many different uses to interfaces. Researching other materials than string, that the designers can take inspiration from, for futuristic interfaces will not only benefit the movie industry but also provide motivation for future interface technologies.

We believe that the design practices we derived by re-reading the use of string may prove to be a valuable alternative to current idea generation methods for purposes of futuristic interface designs.

References


Towards Stanislavski-based Principles for Motion Capture Acting in Animation and Computer Games

Daniel Kade.

Abstract
Current and future animations crave for realistic motions to create a perception of motions that are close to a realistic human-like performance. To create such human-like animations, motion capture actors enrich the movements of digital avatars with realistic and believable motions and emotions. Acting for motion capture, as it is performed today, implies certain challenges. In this paper we address these challenges and argue how to support motion capture actors especially when acting for computer games. We discuss the nature of motion capture acting in the view of Stanislavski’s acting principles and point out the actors’ skills and demands. We conclude that the developed principles should be: ‘Imagination’, ‘Objectives’, ‘Information & Visual References’, ‘Magic if’, ‘Adaptation’ and ‘Relaxation’ to support motion capture actors with their work.

Keywords
Motion Capture, Acting, Animation, Computer Games

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1. Introduction

Today's video games are becoming more and more realistic, not only because of technological advancements but also because of a cultural change demanding highly realistic and aesthetic animations of humans, animals, objects and environments in these games. In many cases, cinematic elements adopted during gameplay mean that games almost feel like watching a movie. It is thanks to motion capture (MoCap) technology that we perceive motions in the gaming environment as more realistic. To create this sense of realism, human motions recorded from skilled performers are mapped to virtual avatars. An important role lies hereby with motion capture actors to create realistic motions and performances that gamers can enjoy.

Actors, especially when performing for games, perform in an 'empty' space and imagine the game environment they act for. For most motion capture shoots it is a common practice for actors to look at reference pictures or animations before they act. This helps actors to imagine the environment and helps directors to explain their expectations and ideas but this is still not effective enough.

Supporting actors so that their performance can be improved in terms of their imagination, emotions and feelings for the play could lead to more natural performances. This is why we need to create a better motion capture environment to support actors with their task of performing realistic and believable performances. Yet to achieve this, we must first understand the nature of a motion capture actor. Here, in this paper we discuss the nature of a motion capture actor and point out skills, demands and developed principles to support motion capture actors with their work. Stanislavski’s acting principles have been chosen as a theoretical basis for this research. This is especially because Stanislavski’s acting principles have influenced many acting styles, even until today and are still basis to many acting schools. Therefore, many acting styles relate to those principles or even provide similar basic principles.

2. What is acting?

To understand the nature of a motion capture actor, we first need to get a basic understanding of what is acting. The complexity of an actor’s nature covers a large area to discuss and addresses different approaches to answer this question. We could look at history and argue that if a storyteller was talking to his audience he could be considered as acting. As some say, storytelling is the oldest form of entertainment known to man [5]. Here the storyteller creates a story or knows a story to tell and uses his imagination to enrich the story. Storytellers then inspire their audience by telling their version of the story and make the story interesting by using voice and dialogs.

Likewise, we could also approach answering the question ‘what is acting?’ through modern times theories where building a character with a behavior, an objective and a life is of importance. For our purposes of understanding the principles of modern acting, we do not need to go into much detail or even into the history of acting. Nonetheless, answering the question of ‘what is acting?’ is not a simple task. There are many views on what acting is. Lee Strasberg answered the question ‘what is acting?’ by saying: it is the creation of a character [10]. Others describe it by saying that the actor’s body is the fundamental sign, when it is there it is looked at and when it moves it attracts the audiences attention [4]. Another definition occurred by interviewing an academic acting teacher and director in an open interview with the goal to explain the essentials of acting. When interviewing him, he stated that “acting internalizes life and the relationship that an actor creates with the environment, his body, as well as feelings, emotions and thoughts that are simulated or even created”. As an actor consciously works on building and using imagination as well as coming towards shaping a character, this definition was then concluded by saying that “acting is the awareness of behavior. We are aware of acting different then when being ourselves”.

The above-mentioned definitions on what is acting can also be applied to motion capture, as the definitions are generally about acting. Creating a character and how this character behaves within its situation and environment is also quite important for motion capture as this might be the basics to prepare to act. The actors’ ability to imagine the environment or the characters situation is of importance for motion capture as well. What we also need to keep in mind is, as cited before, that the actor’s body is the fundamental part of an act, especially when the purpose is to
Defining ‘what is acting?’ is one part but lets ask a bit more deeply, what makes an actor an actor? As others mentioned already, there is no law that an actor needs to have certain characteristics, experiences or training [5]. You could simply be gifted, get on stage and inspire your audience. In reality this is not the common way. Most actors do get some acting training and then spent time preparing a role or a character before going on stage and fascinating their audience.

In modern acting training, two major acting schools have been established, the American and the Russian acting school. In other words, we talk about method acting and the Stanislavski system. Both schools built their theories on the basic elements originated from the Stanislavski approach [7]. The American school, which is based on method acting, was basically shaped and invented by Lee Strasberg who was a student of Stanislavski [9]. Method acting trains actors to use already experienced memories of their personal life to create realistic emotions on stage. Stanislavski’s method approaches this by creating a sense of truth on stage that lets the audience believe that emotions are real.

To get a better understanding about acting in general and the differences of the American and Russian school, the previously mentioned academic acting teacher was furthermore interviewed. Throughout this interview it was mentioned that “the American school can be applied very well in mass production and needs no long rehearsals. So, for modern and realistic characters it functions very well. On the other hand, in sci-fi or fantasy, for example it might become a bit more complicated”. This shows that that there are differences in acting styles and training.

To summarize we can say that an actor, trained or naturally talented, needs to possess certain capabilities to control body, mind and emotions to perform realistic, truthful and believable on stage. In addition an actor needs to prepare and analyze the play to create the character before acting. Moreover, the imagination of an actor plays an important role to create the character and the play. So an actor needs to be able to master certain skills to prepare their act, the character and their body to perform believable and to inspire their audience. The principles of acting, originated from the Russian acting school show us how mastering these skills is approached in their system. As performing a believable and realistic play is very important for motion capture as well, motion capture actors need to be able to use and control their body well to deliver good performances. We can see that the major acting schools set a large focus on this. Therefore, actors performing for motion capture can certainly benefit from these techniques. Nonetheless, we need to be able to support these techniques and provide a better environment that allows the improvement of motion capture results.

3. Which principles should we support in motion capture?

In some research the main principles of Stanislavski’s theories on physical acting were described and structured [8]. In this work the 12 principles of Stanislavski’s physical acting method are presented in short. With the help of these principles we identified the principles that deliver the most benefits for motion capture and allow to be supported by e.g. directors and motion capture studios.

A major point to consider when using the Stanislavski method is the principle of Objectives. Objectives are used to identify the characters beliefs and actions. Therefore, Objectives form in our understanding an important basis or root to understand the scene, the environment and the character of a play. Providing motion capture actors with as much information and material about the play and the character as possible would certainly be helpful for the actors. This would allow actors to spend more time preparing the play, identifying the Objectives of a character as well as to create the character and rehearse before even entering a motion capture studio.

The principle Truth, Belief and the Magic if is used to distinguish the actors beliefs and the beliefs of the character, as well as to distinguish reality and reality on stage. Here the actors try to identify what the character would do in certain situations. This somehow relates to the objectives of the act and creating the character, as well as identifying the environment and its influence on the character. Therefore, it is in our opinion of importance to prepare for motion capture shoots but also as a means to describe the directors expectations of certain scenes. Especially when scenes need to be changed or movements need to be adjusted. So
actors and directors can improve certain scenes collaboratively by using the question ‘what would or should the character do in this situation?’ to overcome issues faster.

Imagination is another important aspect of actor training in the Russian school. It is about how quick an actor can adapt to a play or an imaginative environment, the conditions and the events happening to a character. Imagination is the part that creates the art and already comes into play when actors think about objectives and while shaping the character. Supporting the actor in using his full potential of imagination enriching the performance can only be in the interest of motion capture as well. Providing visual footage of the character, events happening or the environment in advance helps actors to use their imagination better to create the character and to perform more realistic and believable during a motion capture shoot.

Identifying the what, why, and how of a character's action, especially with other characters and the physical environment is considered in Adaptation. Working out the physical environment, the scene, other actors' actions as well as the imaginative virtual environment is mostly done for motion capture shoots on the shoot day. It is a necessary and important step to make actors understand the requirements of their act and the limitations of their acting space which is either limited through physical props, technical limitations or virtual content. It is also used to coordinate actions and interactions of actors and characters which can also be virtual. In Stanislavski’s method this step is also meant to shape the character but when we consider that in most motion capture shoots, especially in games this Adaptation, if we can call it this, takes place right before a shoot. Providing actors with information, visual footage of the physical environment, the virtual environment, a rehearsal day as well as the dimensions of the acting space might support the actor in this matter. Detailed information about the play could also allow actors to identify the what, why and how of a character's action in advance so that the time for Adaptation is reduced on the set.

Supporting the actors Relaxation, concentration and making the actor comfortable must be considered as important. In general actors know best what they need to relax, to relax their muscles and to get concentrated. Supporting Relaxation can be done by for example giving the actor some time and space before the shoot begins. Also a comfortable environment allowing the actor to relax can be thought of. Meaning the actor does not need to stand in a drafty cold hall to get concentrated and relaxed. As we have learned from Stanislavski’s teaching principles and statement about Relaxation, taunt muscles can interfere with inner emotions [8]. This might result in less emotional acting and movements. For motion capture one should avoid this to allow capturing the best body performance an actor can provide. As it requires a motion capture studio only to provide time to a trained actor to prepare, relax and warm-up his body, it might be important to be aware of the necessity of Relaxation and implement it in the motion capture process.

When setting the focus on Objectives, Magic if, Imagination, Adaptation and Relaxation, it is not meant to say that the missing principles of Stanislavski’s system are not of importance. Some principles also add to the preparation as well as building the character, whereas other principles add to skills and tools that the actor uses to control his body and body language. We see these principles as professional skill sets of actors that need to be achieved and trained.

The principles pointed out here show the importance related to motion capture and show initial ideas on how we can support motion capture actors by using these principles. From the view of an actor all necessary principles and techniques should be used to prepare the role, the character and the play. In figure 1 the principles we think are of most importance in the attempt to support a motion capture actor and to create a better motion capture environment can be seen as a simplified visualization.
4. What is the nature of Motion Capture Actors?

At this point we need to understand the nature of a motion capture actor to adapt the above-mentioned principles to help producing better motion capture results. For this, we need to discuss what is different for an actor in motion capture in comparison to other acting environments.

As experienced in some earlier research, MoCap actors do face some challenges while acting [6]. It has shown that the performances of MoCap actors are very dependent on their capability to imagine the scenery they are acting in and to put themselves in the desired role and mood demanded. Moreover, inexperienced motion capture actors were facing the issue to adapt to the MoCap environment quickly. Also imagining and remembering virtual content and their positions, which were needed to perform accurate motions, posed problems to some MoCap actors.

This led in some cases to less emotional and less natural looking performances. Also motions needed to be repeated multiple times to find the right movements suiting the virtual character. Overall, this shows that there are some difficulties in acting for motion capture. The question we raise at this point is, why is it like this and where is the difference to other acting environments?

To get a better understanding of these differences, we contacted three academic acting teachers, who are also experienced in motion capture, to describe their view on the differences between motion capture and other acting environments. One teacher mentioned that acting for motion capture is an even higher mental load due to the need for accuracy in repeating all of your body’s motions, independent of the emotional requirements of a role. Furthermore, it was mentioned that in many motion capture (and compositing) shoots, it’s even harder to act because you have nothing but space to act off of. So basically the lack of support through props, costumes and scenery was addressed, as well as the additional task to not only perform but also provide repeatable motions that look believable.

We got a slightly different view on this topic throughout the previous open interview, performed with the academic acting teacher. The question we asked here was what an actor needs to act. The academic acting teacher explained that a well-trained and experienced actor does not need any prop or specific environment to perform a believable and good performance. In our opinion, this view is actually supported through where it is mentioned that it makes no difference whether you are on a stage or in a studio or out in a field, Acting is acting [5].

Both views do not necessarily bypass each other; they could be true at the same time. This is because acting in MoCap does usually not provide much information of the shoot or even allow a lot of rehearsal time. So the work of an actor, trained or untrained, gets even more complicated. Not having sophisticated scenery or an acting environment might increase this issue.

To put in more details, MoCap acting actually needs to deal with a large variety of acting skills and different actors. MoCap sometimes only needs to record locomotion, so movements of professionals like athletes or other professionals that know how to operate certain devices or machines like for example soldiers. In such a case, acting skills are of less importance as the professional acts himself and performs motions and actions that he or she is used to do. It becomes even more interesting when professional locomotion and acting skills are needed at the same time. Sometimes it might also be the case that the accuracy of motion is vitally important, as it would be when e.g. mimicking military motions is demanded. Then not only emotion is needed, but also correct military motions, the way a weapon is held or the way the soldier walks is vital.

So in short, motion capture actors have a variety of different acting skills and acting backgrounds. Supporting actors of all skill levels to perform better and faster within in motion capture must therefore be of importance.

5. Do we need to adapt major acting techniques in motion capture actor training?

For motion capture, it is quiet obvious that the captured motions are of large importance. The end product an actor delivers is a capture of body movements that, depending on the shoot, can be enriched by voice and video records. A question to raise at this point is if this necessarily implies that emotions are of less importance when only body movements are captured?

When looking at the American acting school, the Russian acting school and at mime acting, acting emotions seems to be an
important point in training and acting. As it is believed in these acting styles that emotions are performed not only through facial and vocal performances but also through body expressions and gestures, we can assume that acted emotions, expressed through body gestures and postures do also enhance the acting outcomes in motion capture. So can we say that either of those acting styles fits better to MoCap, or can we even say none of those are needed because an actor only needs to perform motions?

In the field, there has been very little information about how actors work or behave in a motion capture environment so far to be able to answer those questions.

When looking at the skills and experiences of motion capture actors, we can say that the range lasts from trained and very experienced professional actors that work in movie or theatre to stuntmen and athletes without any acting experience or training. As motion capture shoots demand different experiences, it is important to find the right actor to suit a role, as in any kind of acting. For motion capture, we need to distinguish what kinds of motion capture needs to be performed: cinematics, games, commercials or animation. In general we can say that for cinematics it is likely that a motion capture actor needs to perform not only locomotion but also perform traditional acting. For games, locomotion might be more of importance. This is just a very broad abstraction of motion capture shoots. For some movies or other cinematics, locomotion might be everything needed from a motion capture actor and on the other hand motion capture shoots for games can demand pure acting skills, especially when shooting cut-scenes (short dramatic scenes meant to further explain the story surrounding the game-play). Finding a suitable character for a role might become even more interesting when a mixture of athletic or acrobatic skills and acting skills are needed.

Imagining the scene and the environment, creating a character are practices that trained actors are using and we believe that these practices as well as acting out emotions and motions realistically and believable are of importance to create an even more realistic perception of gaming. Moreover, MoCap acting as a medium can be a quite quick and dynamic way of acting. By saying this it is meant that the preparation time and also other factors like a simplified environment, costumes and props might differ from other acting media. A motion capture actor needs to be able to handle these issues and adapt quickly to the environment. A good acting technique, training and experience definitely help actors doing so. Knowing how to put the actors body in place and use the body while acting for motion capture is important to capture scenes that look realistic and natural in a game or cinematics. A profound acting technique or style, training an actor to create a character and to use the body effectively is also beneficial for motion capture shoots.

When hiring a trained and experienced actor for a motion capture shoot we do not need to adapt major acting techniques because the actor brings those skills already to the set. Nonetheless, we should consider supporting the actor with the principles shown in figure 1. This support will also help untrained actors. When talking about supporting the actor, support might be for actors’ prepartations, through feedback or even technology helping the actor while acting. Motion capture directors and motion capture studios that provide actors support in the mentioned principles could explain untrained and inexperienced actors those techniques briefly and show how they are applied in their motion capture process to improve the acting and to improve timing within the process of a motion capture shoot.

6. What motion capture actors think and need?

To answer these questions, we created questionnaires that have been handed out to 18 motion capture actors and 10 directors working in motion capture.

When asking the actors about what they need to act, some common answers were mentioned. Many actors mentioned the use of visual references, props, costumes and the demand of being provided with as much information as possible about the character, the environment and the conditions in time. Most interestingly all these points mentioned can vary a lot in motion capture. For some shoots, information and props might be sufficient and provided in a decent amount of time in advance to the actor. Visual references that can be used for acting while shooting are usually not provided to an actor. An exception might be for cinematics where props as well as costumes and visual references were built to support the actors while acting. A prominent exam-
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This includes knowing the subject area of the shoot and suggesting other moves as well as being able to imagine the scene. As a forth attribute it was pointed out that it would be helpful as a motion capture actor to have a know-how about the language and procedures as well as technicalities of motion capture shoots.

7. How to improve current motion capture structures?

Before we discuss how we could improve current motion capture structures, we can have a look at figure 2 where our primary investigations show an indication of important skills and demands a good motion capture actor should have. The choices were made according to the frequency of the answers of actors and directors we questioned. Six skills, describing a good motion capture actor have been revealed. Out of these six skills, three major skills and demands can be summarized as good acting skills, good imagination and good body control.

When having a closer look at the three most important skills, they look very familiar, reflecting the principles focusing on actor training.

After identifying the nature of a motion capture actor, as well as the skills a motion capture actor should posses, lets reflect on the principles to support motion capture actors that we identified earlier and showed in figure 1.

A major point that we need to consider is the lack of informa-
motion and visual references that actors need to deal with for many motion capture shoots. This is why we need to update figure 1 to visualize this lack. In figure 3 below, you can see which principles of acting training and preparation need information about the play to prepare the role and the character efficiently.

Let’s now come to the point where we think about what needs to be changed to improve current motion capture environments and procedures.

As we identified, the flow of information for many motion capture shoots must be improved so that actors do have the information to understand the environment and conditions at the set but also are able to build the character with its details, motions and emotions that bring the character to life and can make the play more realistic and believable.

Another important point to address that we see is to support the actors’ imagination. One way how this can be done is to provide visual references, describing the environment and the conditions the character will be in for preparations and building the character as well as right before the shoot as a basis for discussions with other actors, the director and motion capture operators. Seeing visual references and using props while acting also support the actors’ imagination.

Communication with other actors or even the director to work out the objectives and to shape the character can in addition help to increase the understanding of the play and the ideas of the director before the shoot day and could save production time as well as it could lead to better performances due to a better preparation.

A rehearsal day might be a good way to allow these communications and shaping the roles and objectives. Right before the shoot the actor should get time to relax and prepare for the shoot.

Being aware of the actors needs as well as supporting the actors work must be of importance as the performance and the quality of a motion capture shoot is very depended on the actor. Therefore, addressing the listed issues through ideas supporting actors within the principles mentioned in figure 3 is needed to improve motion capture outcomes. Especially solutions that support the actors’ preparation of the play and the character as well as the actors’ imagination in the preparation phase as well as on the shoot day must be developed.

8. Conclusion

When looking at literature dealing with the topic ‘motion capture acting’, less studies have been published. More studies can be found when it comes to the questions, what is acting and how is it taught. Within this paper we aimed to discuss the needs and wants of a motion capture actor, as well as in which way actors can be support. Under this scope, we explored the following points: When within modern acting education, we have seen that the Stanislavski system is quiet often used as a basis for actor training. Therefore, we borrowed the principles of Stanislavski’s physical acting system and pointed out which principles can be seen as important for motion capture and how actors could be supported by directors and motion capture studios to use these principles more effectively.

From the definitions of acting, the interviews and questionnaires with motion capture actors, directors and academic acting teachers we can see that acting for MoCap might not be considered as a special or separate style of acting but we need to say that there are some technicalities and environmental differences. A motion capture actor might need to face the issue of less preparation time and bodily demanding shoots.

Supporting actors to overcome the challenges that lie within motion capture acting is of importance to ensure even more realistic, believable and natural performances. Helping the actors to imagine and visualize the environment, the character acts in and
pointing out the goals of the character to be played will also help the actor to create the character faster. Therefore, we need to create a better motion capture environment as well as guidelines that support the actors while preparing the role and while performing according to principles summarized above (figure 3). Addressing and considering the principles and solutions mentioned in this paper might help to develop ideas further and trigger new solutions that improve the motion capture environment.

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2. Cameron, J. (Director): Avatar [Motion picture]. Twentieth Century Fox, USA (2009)
1. Introdução

Segundo Ana Kalassa El Banat [i], a ilustração teve um papel muito importante na Idade Média, porque era pelas figuras e não pela escrita que a maioria das vezes se compreendia o texto, isso porque grande parte da população era analfabeta. O auge da ilustração se dá através das xilogravuras no século XIV, quando as reproduções tanto de textos quanto de imagens, conhecidos como livro ilustrado, se tornou mais procurado pelo seu baixo custo. Já no final do século XIX e início do século XX, autores e artistas começaram a ter uma comunicação maior entre si e muitas vezes, os marchands desses artistas eram os próprios editores e os estimulavam a produzirem obras baseadas em textos literários como, por exemplo, os trabalhos de ilustração de Pablo Picasso, Raoul Dufy, Alexander Calder e Juan Miró [2].

Do mesmo modo os artistas plásticos brasileiros também produziram obras para livros, mas geralmente, eram capas, vinhetas e abertas de capítulo da literatura. Acerca disso, Paula Viviane Ramos [2], entende que estes trabalhos se originaram em função de dois aspectos: “(I) amizade entre artistas e escritores e (II) necessidade financeira” [2] ou “(...) buscando atingir, por meio da publicação, um relacionamento social maior, um público diferenciado” [2].

Com a modernização da imprensa, no final do século XIX, as revistas e os jornais conquistaram espaço na vida cotidiana dos brasileiros. A imprensa colaborou para o encontro entre escritores, jornalistas, poetas e ilustradores, fortalecendo laços de amizade e promovendo troca de ideias e o desenvolvimento de trabalhos conjuntos. [3] [4]

Com o pensamento voltado para a ilustração como manifestação artística este estudo pretende mostrar uma faceta da influência da arte japonesa nos trabalhos do ilustrador brasileiro, Franco D’Angelo Bergamin, ou simplesmente Kako, como assinada em seus trabalhos e, como o contato da arte e cultura nipônica se manifesta nas obras desse artista.

2. Arte e cultura japonesa no Brasil

Podemos considerar que no Brasil a influência da cultura nipônica ocorreu tardiamente. A intensificação do contato com a cultura nipônica acontece com a imigração japonesa a partir de 1908, que caminhou a passos estreitos na busca por um espaço dentro da cultura brasileira. A princípio formavam grupos reservados porque a pretensão era retornar para a terra natal. Tomo Handa [5] ressalta que por muito tempo os imigrantes japoneses acomodaram em suas memórias as práticas comuns de sua cultura.

Em função das dificuldades, os japoneses perceberam que o retorno à terra natal era um sonho distante, porém a perseverança permaneceu para amenizar a saudade de seu país e alguns familiares. Buscaram, então, no comportamento cultural, na língua materna e, principalmente nas canções, geralmente cantadas sem a presença de instrumentos pertinentes à cultura, poucos haviam trazido na bagagem, uma forma de manifestar o sentimento patriótico. Surgiu assim, o “senso artístico japonês”. [5]

O resultado dessa manifestação foi a projeção da cultura nipônica no cenário da cultura brasileira. Embora essa projeção tenha sido lenta, ela conquistou seu espaço e se instalou, influenciando assim, algumas áreas culturais, além de inaugurar os seus próprios costumes no Brasil. [5]

A área das artes visuais, nos parece, foi a que mais absorveu influência da cultura japonesa. Muitos artistas brasileiros foram buscar nesse ambiente uma forma nova para criar sua arte.

Com essa compreensão, o estudo proposto tem como objeto de pesquisa a arte japonesa e sua influência na arte do ilustrador brasileiro, com preocupação maior na importância que as diferentes artes desse universo contribuem para os trabalhos desse artista: antes, durante ou pós-produção. Para sustentar esse empreendimento foi necessário buscar contato com alguns artistas ilustradores até chegar ao artista contemplado neste estudo. Existem poucos trabalhos (dissertações e teses) sobre a ilustração no Brasil e as existentes estão voltadas para o jornalismo, dessa forma, buscou-se recurso nos sites; da Sociedade dos Ilustradores Brasileiros (SIB), no qual listam os nomes de ilustradores associados e da revista eletrônica Revista Ilustrar. Assim, foi estabelecido contato com o ilustrador Kako, palestras, pessoalmente e via e-mail.

Quando os japoneses passaram a ter independência nas lavouras e conquistar prestígio em alguma outra profissão, retomaram a sua cultura que havia se acomodado na memória.
Voltaram-se, assim, para a arte e costumes passando para seus descendentes. Através de associações e instituições as pesquisas teóricas encontraram espaço para manter a tradição da história da cultura. Isso permitiu aos brasileiros, acesso ao conhecimento da arte e cultura nipônica e, alguns demonstrando um interesse maior buscaram aprender a língua e escrita japonesa.

Outro fator importante para este contato intercultural foram as artes visuais, como estudos e exposições relacionados à arte nipo-brasileira influenciada pela cultura brasileira. No início muitos artistas como Manabu Mabe (Fig. 1), Tomie Ohtake (Fig. 2) e Takashi Fukushima (Fig. 3) produziram obras figurativas, talvez por ser característica da vanguarda da década de 50, mas mantendo a cultura trazida de seus ancestrais representada nas suas obras “profundamente marcada pela gestualidade, ritmo e espiritualidade no fazer artístico. (...) onde a incisão sobre a superfície decorre de uma férrrea disciplina interior” [5]. A arte abstrata oriental provocou a curiosidade e interesse em muitos brasileiros pelos movimentos expressivos, porém delicadamente simples.

Contudo foi por volta da década de 70 que a cultura se inseriu no contexto brasileiro como parte da cultura do Brasil porque o estranhamento já começava a se dissipar. Foram os mangás (histórias em quadrinhos) e os seriados como Gozila e National Kid os responsáveis por despertar o interesse do povo brasileiro (histórias em quadrinhos) e os seriados como Godzila e National Kid os responsáveis por despertar o interesse do povo brasileiro. Através das gravuras japonesas, os ukiyo-ê. 

Kako relay numa entrevista para a Revista Ilustrar nº 06, que sua maior influência em relação a cultura e arte japonesa veio através das gravuras japonesas, os ukiyo-ê. "(...) acho que o mais importante fator, diria que o estudo sobre Ukiyo-ê e sobre o trabalho de artistas como Hokusai (Fig. 5) e Hiroshige (Fig. 6) pesaram muito, como influência. A limitação de cores que eles tinham em suas gravuras, na época, fazia estes artistas pensarem muito na composição, em todos os elementos gráficos que eles teriam que colocar e, por consequência, onde de ver o herói e nova de entender o mundo, aproximando, assim, as duas culturas.

Pode-se dizer que em função desse novo conhecimento, algumas áreas da cultura brasileira passaram a buscar na cultura oriental japonesa um diferenciador para agregar na arte, no modo ou conceito de vida. O artista ilustrador Kako buscou esse diferenciador e fez dele sua arte. As ilustrações do artista são concebidas e construídas num universo nipônico.

3 . Arte japonesas nas ilustrações de Kako

A peculiaridade dos trabalhos de Kako e que chama a atenção do observador são as cores vibrantes e intensas que harmonizam com o traço digital suave, delicado e minucioso, elementos comuns na cultura e arte japonesa. Não é esse ou aquele elemento que aparece como influência da arte oriental japonesa em suas obras, mas um conjunto de elementos que as compõe. (Fig. 4)

"Os japoneses, em contraste com os ocidentais, têm uma visão das cores num plano horizontal intuitivo e dão pouca atenção à influência da luz. As cores, mesmo se intensas ou suaves, não são muito identificadas com base no reflexo de luz e sombra, mas em termos do significado ou sentimento associado a elas. Os adjetivos usados para descrever as cores, como por exemplo iki (sobestocado ou chic), shibui (subjugado ou reprimido) ou hanari (alegre ou jovial), salientam mais a sensibilidade do que os valores das cores frente a cada uma" [7]

É dessa forma que as cores se apresentam nos trabalhos do artista brasileiro que compreende cada cor e o valor que ela tem na sua representação em determinada imagem. Ora se apresentam vibrantes como iki, ora menos intensas como hanari ou mais neutras como shibui.

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Pode-se dizer que começou no final do século XVI, com o desenvolvimento dos chonin (arteãos e comerciantes), que passaram a escrever histórias, contos, juntamente com desenhistas e criaram os chon, ou seja, livros com desenhos, ilustrações [9]. No início a estampa era preta e branca e pintada à mão, com predomínio de tons alaranjados, carmesins, verdes e azais, foi mais tarde que as cores, azul e vermelho passaram a ser pintados diretamente na matriz para serem impressas no papel.

estariam estas cores. Busquei sempre me aproximar deles e criar as mesmas limitações para mim e isso é um desafio muito grande, pois apesar de serem poucas escolhas, elas são muito difíceis de fazer.” [8]

Suas limitações de cores abrangem o azul, o verde e os tons neutros do marrom. [10] Kako teve a preocupação de trabalhar a cor vermelha usando-a como guia para compor essas outras. [8] (Fig. 7) Foi a maneira de conceber uma ilustração que fez com que suas obras tivessem um estilo próprio com características orientais.

Aproximadamente aos 12 anos, Kako e seu irmão estudaram com Domingos Takeshita, um artista que tinha uma escola numa livraria de quadrinhos, o Estúdio Pinheiros, em São Paulo. Tak, como o chamavam, não ensinava exatamente a teoria das cores, seu pequeno grupo de alunos ficava assistindo filmes, lendo livros e quadrinhos ou conversavam sobre o sentido da vida, de vez em quando também desenhavam. Takeshita encorajava-os a observarem o mundo e com isso discutiam sobre assuntos complexos da vida. Foram estudos incomuns para uma criança, porém com um poder de absorção bastante grande. Se observarmos os trabalhos de Kako que parecem trazer no seu bojo muito desse aprendizado. [10]

Segundo Kako, no início da carreira como ilustrador, ao invés de traçar linhas com caneta ou pincel, procurava construí-las de forma fina e grossa e preenche-las com tinta, algo que demorava muito para concluir uma ilustração. Com os meios digitais surgiram os vetores que foram sua melhor opção para ter essas linhas com mais facilidade, tais linhas estão presentes nas estampas japonesas e foram seu guia na concepção de suas obras. (Fig. 8)

As xilogravuras, por exemplo, também apresentam este tipo de linhas, pois a madeira recebia o primeiro desenho, hannya-shita-e, que eram feitos com os pincéis “fudê” usados para a arte da caligrafia (shodô). A escrita japonesa é constituída por essas linhas, e cada traço tem sua ordem e precisão. Existe a preocupação com a linha e o espaço, que são a constituição pictórica da imagem como sua essência. [11]

Encontramos ainda nas gravuras japonesas os movimentos cênicos apresentados nas imagens e que estão presentes também na cultura pop, como os mangá. O ilustrador brasileiro executa com precisão esses movimentos. Essas características despertaram o interesse em Rob Wilson, diretor de arte da Playboy: “When I want something masculine and kinetic, but also thoughtful and nuanced, I’m looking for Kako. That’s exactly what he brings.” [10] (Fig. 9)

Para os japoneses tudo o que se propõe a criar tem que estar em harmonia com belo, eles estão sempre preocupados com o visual. Para eles a “estética é sensível ao real, ao concreto, aos matizes e aos pormenores”. [12] O povo nipônico “é capaz de se dar conta da infinita complexidade e riqueza de um objeto, de uma flor, de um sentimento. E, em decorrência disso, de miniaturizar, de requerer, de levar à perfeição o verso, o relógio, a expressão emotiva, o vocabulário conceitual”. [13] (Fig. 9)

O uso do preto nos trabalhos de Kako remete às gravuras japonesas, com um olhar mais atento pode-se compará-las com as estampas japonesas, que trabalham o preto como acréscimo e complemento para as cores em algumas imagens. (Fig. 10)

Os orientais japoneses também trabalham com a ideia da ambiguidade que sugere ao observador uma interpretação particular sem ser definida como certa ou errada. Esta interpretação livre e ambígua se concentra também nas cores ou na ausência delas. Os nipônicos preferem o monocromático porque trabalha com a sugestão. A obra sugere ao olhar do observador a possibilidade de imaginar cores nas figuras.

A sugestão depende da situação em admitir que os significados existam além do que pode ser visto ou descrito [14], como se percebe na famosa passagem encontrada no ”Essays in Idleness” de Kenkô (1283-1350)

“Are we to look at cherry blossoms only in full bloom, the moon only when it is cloudless? To long for the moon while looking on the rain, to lower the blinds and be
unaware of the passing of the spring _ these are even more deeply moving. Branches about to blossom or gardens strewn with faded flowers are worthy of our admiration.” [14]

Dessa mesma forma é possível entender o minimalismo do design japonês que auxiliou Kako a compor seus gráficos e transmitir com eficácia as informações contidas num trabalho. Na visão de Siân Evans [15], o design, para os japoneses, é um processo evolutivo e não de revolução, assim o espírito do design japonês contemporâneo tem como obstinação os valores da estética tradicional e, suas filosofias são governadas pelas concepções e criações do homem em fazer os objetos. O autor destaca a influência ocidental sobre o Japão, nas vestimentas, objetos, técnicas artísticas e nas novas imagens, porém na aplicação dessas ações interculturais é mantida a simplicidade da cultura japonesa, as formas geométricas, as cores e suas simbologias, e principalmente, a comunicação com o outro, tanto no sentido de informação e símbolos quanto na tecnologia. Por esse caminho segue o pensamento do ilustrador brasileiro, que usa o meio digital apenas como uma ferramenta para a elaboração de seus trabalhos, não como matéria-prima. (Fig. 11)

4. Considerações Finais

O artista ilustrador brasileiro Franco D’Angelo Bergamini ou kako como assina seus trabalhos no universo artístico, compreendeu o pensamento japonês e absorveu como um bom discípulo o sinalizado de uma cultura tão diferente da ocidental. Essa compreensão e essa absorção são evidentes nas suas criações. A cultura e arte nipônicas tiveram peso na sua definição como artista, ou seja, foi a escolha por traços e linhas que vão ao encontro com estampas e gravuras japonesas que definem suas ilustrações. A cultura exótica, como entende Kako, tem elementos que em todas as suas formas estão sempre buscando a harmonia mesmo com o uso de tecnologia. As formas e cores, a simbologia, a simplicidade e a delicadeza entram em sintonia na composição das ilustrações. Na observação das obras de Kako, percebemos que o ilustrador está em completo engajamento com o universo nipônico por encontrarmos esses elementos nelas contido.

Assim, dentro do universo da arte da ilustração no Brasil, procurou-se mostrar que a influência de Kako se dá pela aproximação da cultura nipônica com a cultura ocidental brasileira, e nesse contexto ele buscou no paradoxo - a complexidade da simplicidade – todo elemento para construir seu trabalho.

5. Referências Bibliográficas

The Arab Animation Spring
How Have Arab Animation Artists Used the Power of YouTube and Social Media in Response to the Recent Arab Revolution?

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Abstract
This article explores how YouTube and social media became the main platform for Arab animation artists to distribute their political works during the ‘Arab Spring’ in Tunisia, Egypt, Libya, Yemen, Syria and elsewhere in the Middle East since 2011. During the Arab Spring, Arab people started to use the internet and social media strongly and many political animated clips went viral. Statistics suggest that between 25–40% of the population in the Middle East and North Africa are watching YouTube daily, leading it to become one of the most active regions in the world for internet use. Therefore, the Arab Spring motivated Arab animation artists and studios to distribute their anti-regime clips on YouTube, including their own logos and names without fear of being arrested by the regime and their works being forbidden by censorship. The implication for this is an explosion in the exposure of Arab animation artists and their work in comparison to the very limited opportunities and freedoms of the past determined by regimes exercising control and censorship over traditional media such as television. Using interview data gathered from discussion with artists and animation studios, the article demonstrates how viral animation benefited from social movement in the Arab world in, what appears to be, an ‘Arab animation spring’.

Keywords
Arab Animation, Arab filmmakers, Arab revolution, Arab Spring, Social Media, YouTube, censorship, political communication, Middle East, North Africa, social movement

1. Loughborough University, School of the Arts, United Kingdom
Most Arab countries could not produce films until their national independence from British, French, Italian and Turkish colonial rule, which affected negatively the Arab cinema because of political circumstances (Shafik 2007, p. 9). Egypt had its independence earlier than the other Arab countries and started film production first which later became the so-called ‘Arab Hollywood’. However, most of the Arab regimes and governments have legal restrictions and censorship that control the media’s freedom of expression. Therefore, the Arab filmmakers face many challenges in producing their films, especially if the content of these films contains politics, sex or religion (ibid. p.32-33). All film projects used to require an approval by a special authority before or after shooting and producing any film – the so-called ‘film visa’; this committee had the authority to approve or reject films, and had the power to enforce filmmakers to cut some scenes from their films (ibid. p. 34). Thus, hundreds of Arabic films became the so-called ‘cave films’ – never being screened for a large audience (ibid. p. 35, 243). The films had to be suitable to the country’s ideology, tradition, policy and religion.

It is worth noting that the censorship was not only in the Arab region; most of the countries around the world have or used to have censorship including the United States of America. Between 1934 and 1968, the Production Code Administration (PCA) required the filmmakers and producers in the United States to submit their scripts, lyrics and completed films to the censorship board for approval before release (Cohen 2004, p. 31-32, 44). In addition, The FBI (Federal Bureau of Investigation) verified the contents of works in production and ‘took this matter seriously’ by using the PCA. For example, Disney studios agreed to change any mention of the FBI to ‘federal security officer’ after two of Disney’s live-action features, Moon Pilot (1962) and That Darn Cat (1965), were seen to be depicting the FBI in an ‘unflattering light’ (ibid. p. 34).

In 1968 the Motion Picture Association of America replaced their censorship system with a ratings system which categorised films and their content’s suitability for certain audiences, especially children (ibid. p. 45). This system took the responsibility of informing parents whether film content was suitable for their children or not depending on whether the film contained violence, sex and other strong images and language. Films were released with different ratings such as G (general audience), M (mature audience, later changed to GP then PG to suggest parental guidance) and X (adult only, later changed to A).

For many years the Arab filmmakers and producers became the self-censors of their work to avoid trouble with the censorship board. Writers of cartoon shows were ‘responsible for creating scripts free of problems’ (ibid. p. 132). The self-censorship created rules for the Arab filmmakers themselves which arose out of fear from revealing the truth to the regime. Consequently, the filmmakers tried to avoid depicting unacceptable images due to ideological beliefs which were enforced by the regime. Therefore, the cinematic art in the Arab region was a complicit illusion made by the artists themselves because they could not move beyond their self-censorship (Almabroki, 2012).

The power of the censorship in the Arab region remained strict until unexpected events happened in North Africa and the Middle East. On 17th December 2010, a young Tunisian street vendor, Mohamed Bouazizi from Sidi Bouzid, set himself on fire in front of a governor’s official because of life difficulties and in response to the dictatorship after he received a fine from a municipal inspector. The consequences of this self-immolation were protests against the Tunisian regime until the president Zen Ben Ali escaped from the country on 14th January 2011, just days after Mohamed Bouazizi died on 4th January 2011. This revolution – the so-called Arab Spring – inspired the Arab people to protest against their governments’ policy and has been spreading rapidly across the Middle East and North Africa in countries such as Egypt, Libya, Yemen, Syria and other Arab countries. The Arab people’s expectations for the success of the Arab Spring in North Africa and the Middle East were enhanced by using social media to post numerous messages, opinions and criticisms about democracy and freedom (Howard and Hussain 2013, p. 49). Thus, the Arab Spring creates hope to the artists that ‘a new era of artistic freedom and opportunity had finally arrived’ (Jaafar, 2012).

Before the Arab Spring, the Tunisian regime insisted that any film posted online required the filmmaker to gain official permission from the authorities. If this was not done, the consequences were that the filmmaker could be fined and jailed for ‘causing harm by means of telecommunication networks’ (ibid. p. 8.4).
However, after the Tunisian revolution, the censorship boards started to lose their power in most of the Arab countries; the Arab Spring motivated Arab artists and gives them hope to expose their creativity and distribute their political visual arts by using social media such as YouTube, Vimeo, Facebook and other networks. Many of the Arab artists, cartoonists, animators and studios used social media as an important tool for critiquing their governments whether including their own names or anonymously, and without fear of being arrested by the regime. Their works could not be forbidden by censorship because the government had difficulty policing the internet and digital media networks:

The importance of the internet for contemporary Arab civil society actors can be attributed to two factors: first, many groups were pushed online because other forms of political communication were prohibitively expensive and regulated by the state. Radio commercials and newspapers ads were still beyond the budget of most small civic groups and also similarly regulated by the state. The well-monitored broadcast media were a means by which the state and mainstream political parties regulated discourse. Second, the internet allowed for content to be hosted on servers beyond the control of state censors and afforded anonymity to those who advanced political criticism. During times of crises, when physical space for public conversation and debate closed down, the internet provides virtual spaces for political communication. (ibid. p. 5)

The impact of social media on the recent Arab revolution is ‘leading up to the shift of control from power in people to the power of the people’ (Abdelhay2012, p. 533). The implication of this was an explosion in the exposure of Arab animation artists and their work in comparison to the very limited opportunities and freedoms of the past determined by regimes that exercised control and censorship over traditional media, especially broadcasting. Social media has played an important role in supporting the Arab artists that ‘believe their contribution matters’ to share their works and interact with the Arab audience anytime they want (Jenkins 2006, p. 7). Also, the Arab Spring makes the protesters “citizen-documentarians” to believe in the power of moving image, by using their cameras and mobile phones to record and document the dramatic turn of events that happened front of them, and then share these videos with their communities (Jaafar, 2012). This type of contribution is called ‘participatory culture’ which enabled people to share and publish, usually through literature or the internet, their individual expression, news and ideas with others (Jenkins2006, p. 4).

In addition, most social media networks, especially YouTube and Facebook, are free to use and offer the Arab artist and filmmakers the opportunity to distribute their work, made on small budgets, to massive audiences in the Arab region and the rest of the world: much larger in contrast than to those works shown on national television and in the cinema (Abdelhay2012, p. 530). According to Dr. Mohamed Ghazala, the director of regional African and Arabian chapter of the Association Internationale du Film d’Animation (ASIFA):

Arab films were negatively affected by the censorship. Artists whatever their nationalities have to have the freedom of expression in their work without any censorship by governments. I think the Arab Spring becomes the platform of freedom to the Arabic animation artists and studios and I hope the works that will be produced in the future will reflect our creativity to the world.
(Ghazala, 29 March 2012 interview)

Social media encourages the Arab artists to use it as a powerful platform for their political self-expression. Cambie (2012, p. 28) points out that the Arab people had been using social media before the revolution for years, but the Arab Spring ‘made people realise just how powerful these tools could be’. For example, WaelGhonim is one of the Egyptian social media activists who started and helped to spark the Egyptian revolution by creating the Facebook memorial page ‘We are all Khaled Said’; this page was about a young blogger who had been arrested and beaten to death by the Egyptian security forces for ‘exposing their corruption’ (Howard and Hussain 2013, p. 21). Ghonim says that everyone contributed small pieces via social media until they had drawn the whole picture of the Egyptian revolution (Cambie 2012, p. 31).

A group of young Egyptian activists and filmmakers believed in the power of moving image by launching a non-profit online media collective called Mosireen during the recent Egyptian revolution. The aim of this project was to film the continuous
events of the revolution, and show the truth to the Egyptian people. Mosireen hosted an online library of moving images from the revolution, which was viewed by millions of visitors to become the most watched non-profit YouTube channel in Egypt of all time (Jaafar, 2012). Moreover, many political cartoonists delivered very powerful messages through their illustrations, such as the Jordanian cartoonist Emad Hajjaj (figure 1), the Syrian Ali Ferzat, the Egyptian Sherif Arafa, and many other cartoonists from the Arab world. The Arab Spring provided great political material to these artists to express themselves on a daily basis due to the rapidly changing events in the Middle East. In addition, social media websites gave the cartoonists the ability to spread their work worldwide during the Arab uprising, and reach millions of people within a few minutes of posting, in comparison to the slow-paced process of traditional media such as newspapers and magazines (Harutyunyan, 2012).

One of the Arab animation studios Kharabeesh (‘scribbles’ in Arabic) based in Amman, the capital city of Jordan, became one of the most popular Arab YouTube cartoon channels in the Middle East and North Africa as a consequence of the Arab revolution. The studio produced many political clips and music videos featuring Arab political figures, which have been viewed by a large number of audiences and received international channels’ attention such as CNN, France24, ABC News, Aljazeera and other international channels, during the Arab Spring. Subsequently, the studio established a channel called Liberal Scribbles which contains a collection of productions that highlights the revolution’s course of events in a creative manner and creating serious political points; therefore, ‘Nobody is safe from Kharabeesh’s jokes’ (Awad, 2012).

Kharabeesh studio started in 2008 as a small production house, producing social animated videos through simple quality animation, and then posting them on the internet for free to watch. The technique of the majority of Kharabeesh’s animation is cut-out animation. It is a simple animation style that combines photographs and vector graphics together, and then uses computer generated animation, mainly Adobe Flash, software to make flat characters move, talk and change their facial expressions. A number of popular animations were produced using this method, such as the television shows South Park and Angela Anaconda.

The entertainment studio JibJab also uses cut-out animation, and was created by the American brothers Evan and Gregg Spiridellis. They first came to public attention when they posted their first animated political satire online in 2000 called Capitol 3, and received attention from the US news channels and viewers (Robinson 2010, p. 49).

Most of Kharabeesh’s videos could be stylized as limited animation with political mockery dialogue. For example, their characters have simple movements of their hands, arms, heads, and mouths, and the rest of their bodies are almost motionless (figure 2 & 3). Most of the videos are made with simple shadows, static moving cameras and are free of lights. The cut-out animation technique saves production time; the animator does not have to spend many hours creating artwork, such as drawing characters and backgrounds and then changing each individual key frame in animation. The Kharabeesh team wanted to use an animation technique that was less time consuming, as the fast political changes that happened during the Arab Spring inspired them to produce more clips and sketches and upload them to their channel on YouTube every few days. Furthermore, the cut-out technique exports small file sizes that are suitable for Kharabeesh as an online channel. According to Wael Attili, animation director and the co-founder of Kharabeesh:

>Purposely, we did not want to make high quality animation such as Disney and Pixar. Basically, we celebrate the simple quality; we want to create very simple clips which anybody could make, we want to ‘democratize the creativity’.

(Attili, 23 October 2012 interview)

Before the Arab Spring, Kharabeesh studio tried to find local channels to support and broadcast their projects for the Jordanian audience, but they could not find any supporter. Attili (23 Octo-
ber 2012 interview) indicates that the main problem most of the Arab channels have is that the government support most of the channels without having a commercial mentality. Therefore, the studio started to sell their products to mobile telecommunication companies as mobile content. However, this type of content forced the studio to work with limited technology, such as small video size, low quality, small screen dimensions, and small file size. Therefore, these limitations affected the quality of the animation productions. Consequently, they designed their style specific to mobile technology requirements and then carried on by producing simple cartoon clips. According to Attili (23 October 2012 interview), “I think that people are looking for creativity not visual quality.”

It is worth mentioning that Kharabeesh was active before the Arab revolution, but it became ‘super’ active and more popular during and after the political uprising. Basically, YouTube became the main platform of showing and spreading Kharabeesh works to the Arab and international viewers by streaming their animation on the web, which increase raised their income. Attili (23 October 2012 interview) indicates that the traditional media played an important role in promoting social media by announcing that the recent Arab revolution happened because of social media. Therefore, this resulted in free advertising for YouTube, Twitter and Facebook. Afterwards, large numbers of Arab people started to use the internet and social media.

The dynamic of technology in Middle East and North Africa are rated as the highest and fastest growing regions in the developing world (Howard and Hussain 2013, p. 12). Therefore, this development motivated the Arab animation artists and studios to use the internet as the main platform for their works. Moreover, Howard and Hussain (2013, p. 18) indicate that ‘digital media provided the important new tools that allow social movements to accomplish political goals that had previously been unachievable’. Attili said about this issue:

There is no censorship on YouTube, and we can do whatever we want. Basically, we do not need to broadcast our work on the TV; we only need YouTube; you could count the viewer’s numbers, and people interact more with it. Subsequently, we established three other branches in Tunisia, Egypt and Emirates.

Technology such as computers and smart phones helped a lot to spread the Arabic creativity via the internet. (Attili, 23 October 2012 interview)

The main ‘tipping point’ that happened for Kharabeesh Studio was the Arab revolution. Kharabeesh projects are more concentrating on the contents of the dialogue and imitating the animated voice acting especially the characters of the political leaders. The dialogue of the videos is in Arabic with English and other languages subtitles in order to reach the international viewers and media. For example, their first political video about the Arab revolution was on 19th January 2011: after the Tunisian revolution finished and before the Egyptian revolution started. The three minutes clip was about mocking the Tunisian president Zen Ben Ali who fled from Tunisia to Saudi Arabia by plane. Ben Ali calls some European and Arab leaders such as the French president Nicolas Sarkozy, the Egyptian president Hosni Mubarak, the Libyan president Muammar Gaddai and other leaders to ask them for hosting (figure 3). The clip by Kharabeesh Studio shows the real heads but drawn bodies with simple lip-sync and bold dialogue. Attili said: The idea of using the real head is to tell the Arab people that this is in fact not a joke, because sometimes representing somebody through an illustration might be seen as symbolic, but we intentionally are looking for Zen Ben Ali in our clip. Consequently, the clip broke all the fear borders; we boldly put our studio’s logo on the clip which talks about the Arab leaders. However, Arab people are not used to political sarcasm in animation, they may have seen it in caricature form, but it did not exist in Arab animation. (Attili, 23 October 2012 interview)

This simple video with basic animation style spread very fast and drew attention from many international channels. In addition, it was their first video that hit more than one million viewers

Figure 3. Kharabeesh cartoons, Le journal du ZABA (2011).
on YouTube. Subsequently, they started to make more simple animated clips consistently about the Arab revolution in Egypt, Libya, and Syria and Yemen. Afterwards, the Arab Spring got more complicated and the situation became more sensitive, which led to Kharabeesh deciding to be more careful about making clips concerning the revolution. They realised that the situation and the consequences of the Arab revolution were not going well, Attili said:

Basically, the fantasy and the romance of the Arab revolution were finished, especially when NATO (North Atlantic Treaty Organization) invaded Libya; I think this killed the innocence of the Arab revolution. Recently, we carefully made some political clips. As well, we are making more variety of videos such as social, comedy, entertainment and animation tutorials, and not only political. (Attili, 23 October 2012 interview)

Social media encouraged the Arab artists not only to create political works, but to recover their previous work that had been banned, due to the strict state censorship, and share these films with the public too (Abdelhay 2012, p. 536). In addition, some artists uploaded their political works during or after the Arab Spring due to the rising interest of the Arab people in the political issues and the changing events. Therefore, YouTube became a big archive of Arab animation films and clips which are available to everybody.

A Syrian animation director Akram Agha made a few political shorts before the Arab Spring such as Attention (2005) and The General’s Boot (2008). The length of The General’s Boot film is 17 minutes and he made it on his own, taking around one year to produce. The film tells a story about dictatorship and freedom; the director uses the metaphor as a visual language of his film. For example; the army boots take the role of the leaders as representative of repression and authoritarianism, and the worn shoes take the role of the people (Figure 4).

Agha’s film The General’s Boot mirrored reality three years later; it was similar to the events that occurred during the Arab Spring. Agha (18 January 2013 interview) confirmed that he did not consider that he had predicted the Arab Spring, but that it was “a reading of the history and life cycle”. However, the film was inspired by the ‘Odessa Steps’ scene from the film Battleship Potemkin (1925) by Sergei Eisenstein, and then developed to become more like a prophecy of the Arab Spring.

The film was uploaded on YouTube in 2011 when the Tunisian and Egyptian revolutions finished and just a few days before the Syrian revolution started. Agha (18 January 2013 interview) wanted to send a message to the Arab audience through his film’s ending. It shows that the success of a revolution does not necessarily mean the making of a civilized country; the general’s boots could remain even after the revolution. A question was asked to Agha about the reason for not posting the film online before the revolution. From Agha’s point of view this was because of a perceived lack of interest by the Arab audience to this type of political animation, and his subject, an Arab revolution against the regime, was just a fantasy that would never happen.

Social media networks are used as a technological weapon by the Arab artists to criticise the regime, governments and some public behaviours and attitudes. Nevertheless, the right of freedom of expression is still limited because of the strict faith-based internet censorship in the majority of Arab and Muslim countries. Howard and Hussain (2013, p. 83) state that ‘official attribute intervention to preventing the spread of blasphemous or offensive information that challenges the religious and cultural morality of the state’. Also the Arab and Muslim viewers would target and critique the posted videos and check their suitability in order to protect the moral values and the principles of Islam from any offensive and blasphemous content. Hence, the Arab artists should pay attention to public criticism of their art works. Cohen (2004, p. 155) notes about this issue:

The censure of a person can be far more damaging than the censorship of a film. When a film is cut the public loses something that might have occupied the screen for only a few seconds. When a talented person is denied work in his or her chosen field, the public may lose the achievements of a whole career.
The Cairo Declaration on Human Rights in Islam (CDHRI) gives everyone ‘the right to enjoy the fruits of their scientific, literary, artistic, or technical production and the right to protect the moral and material interests stemming from it, the document stipulates that such content should not be contrary to the principles of Islam Sharia’ (Noman 2011, p. 3). Arab filmmakers have enough cultural knowledge and life experience to know what is acceptable and what is not acceptable in order to avoid offending the Muslims; they know the importance of dealing with their cultural boundaries. Nevertheless, the Arab filmmakers should play it safe and consult Islamic councils to avoid any serious problems with the Islamic world in case they want to post any artistic work online which includes Islamic content.

The Arab Spring expanded the boundaries of the freedom of expression for the Arab people in North Africa and the Middle East. Therefore, Arab animation artists used the power of social media, especially YouTube, to distribute their political works during the Arab Spring in Tunisia, Egypt, Libya, Yemen, Syria, and elsewhere in North Africa and the Middle East since 2011 without fear of being arrested by the regime. The implication for this is an explosion in the exposure of Arab animation artists and their work in comparison to the very limited opportunity and freedoms of the past determined by regimes that practice control and censorship over traditional media such as television, cinema, radio and newspapers. Finally, social media provided access to a big archive of Arab animation which is now available to everybody.

**List of Illustration:**


Figure 2. Kharabeesh Cartoon Channel. 2011. Hosni Mubarak & the 40 Thieves. [Online video still]. Available at: <http://www.youtube.com/watch?v=Cot3i_nMtUg>[Accessed 22 November 2012].


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Engaging Visual Purpose: Toward the Use of Writing for Drawing

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Abstract

Talented educators in the fine arts successfully help students master difficult perceptual skills, such as 3-point perspective along with achieving nuance in line and shading, which communicates tangible elements like texture, and gesture, as well as intangible elements such as energy and rest. However, helping those same students develop an overall sense of purpose can be an exercise in frustration. Students who master these difficult perceptual skills can still produce work that comes across as tentative—lacking a sense of purpose within the work or a sense of an individual behind that work. This paper, based on a case study, posits that interdisciplinary collaboration between English departments and the fine arts might improve student drawing by encouraging a journey into the interior experiences of the people and places whose exteriors students must capture with an intention that goes beyond draftsmanship. In order to make that journey, I argue that students of drawing should learn descriptive writing skills in order to connect with important elements that they cannot see but must represent. Importantly, writing is useful not because it is interchangeable with drawing, but because the two capture unique qualities in complementary ways. Writing not only increases the student’s ability to see detail and interaction, but also provides insights into motivation. Students write about an experience of observation, in which they represent person and scene through figures of speech and dialogue, and action through the over time development of that scene. I argue that this approach could be particularly good at helping students think about the energy and interior experience of a person or place over time, as a series of statements, questions, and demands that influence later visual

Keywords

Descriptive writing, illustration, metaphor, figurative language.
Engaging Visual Purpose: Toward the Use of Writing for Drawing

Susan M. Hagan

1. Introduction
Since morphing my interests and training in design to a more analytical interest in multimedia rhetoric, I have looked for opportunities to present my visual/verbal point of view—one where the visual and the verbal are unique, and where both are equal contributors to meaning. Still, I am aware that a personally inspired argument, such as the one that I will present here, can be either the best or worst reason for beginning a project. Missionary fervor does have its place. However, missionaries seem to experience one problem with all too frequent regularity. The very people they thought they were sent to “save,” often run them out of town—and who knows how many times they were asking for it. That is the cautionary stance I take as I argue for interdisciplinary collaboration between English departments and the fine arts in order to help students of illustration, who are struggling to move past draftsmanship, achieve more expressive outcomes. This collaboration focuses on the synthesis of two sui generis elements that complement each other (Hagan, 2007). In that complementary process, writing allows students to first consider what they cannot see, by exploring the statements, questions, and demands that are the unique elements of writing (Olson, 1994). I posit that the experience of writing could imbue deeper expression into the spatial relationships, textures, and colors that are the unique elements of drawing (Hagan, 2007). I believe that those who learn how to write, using the approach presented here, might find renewed voice and purpose. In fact they might find that voice for the first time.

Many talented educators in the fine arts successfully teach students how to master difficult skills, while groups such as the Drawing Research Network encourage new approaches to pedagogical exploration. Both individually and collectively, the fine arts is committed to helping students develop an overall sense of purpose that goes beyond the ability to represent 3-point perspective, or create interesting textures using charcoal and a kneaded eraser. Still, for both student and educator, the process can be an exercise in frustration. Students who have mastered perceptual skills can continue to produce drawings that come across as tentative—lacking a sense of message or voice within the work. We need to explore options that could lead to a set of heuristics that encourage the development of purpose. Without that skill, style
can become formulaic, leading to “off the rack” representations that dishearten the artist and bore the audience.

In the classroom, drawing is often taught as a master/apprentice experience. In these situations, students observe the master’s process and learn a sense of the push-and-pull of materials as the master works. Students then go back to their own work with the sense of the master’s technique as they do exercises in blind contour and memory drawing, as well as multiple approaches to perspective and the figure. That type of learning is invaluable, because it gives the student a sense of the physical aspect of the work.

In the library, books attempt to mimic these master/apprentice observations to varying degrees. Kimon Nicolaides’ The Natural Way to Draw (1975) focuses on creating effects including a sense of weight and gesture in the drawing. Bert Dodson’s Keys to Drawing (1985) concentrates on aspects of drawing such as developing the illusion of texture or light. Betty Edward’s book, Drawing on the Right Side of the Brain (1989) teaches the general public how to move from iconic thinking to the observational thinking necessary to represent faces, figures, or rooms. Daniel Mendelowitz’s Drawing (1980) attempts to familiarize the student with historical themes. Margaret Davidson’s Contemporary Drawing (2011) invites the apprentice to learn Seurat’s approach to drawing by noting, “real hands-on learning can also be gained by copying some of his drawings” (p. 18). These books, in isolation from the classroom, might not be as successful as classroom activities with a talented educator, but they do offer one more way to acquire knowledge of perceptual skills.

Of course, educators in the classroom and in the textbook also attempt to help their students, or readers, achieve a sense of purpose in a variety of ways. Both Dodson and Mendelowitz’s books do this by considering the idea of imagination. Mendelowitz breaks that quality down into four properties. These are a sense of empathy, a sense of fantasy, a focus on the details, and a focus on the whole. Dodson refrains from an analysis of the parts and instead concentrates on ways of jumpstarting the process by, for example, encouraging students to look at “the known” in ways that will make it seem new again. Dodson invites students to use words such as “bristly” or “angular” to trigger closer contact with their feelings concerning the object to be drawn. Back in the classroom, educators often have their students keep journals of both their drawing and their thinking throughout the semester in the hope that such journals will help students not only develop the habit of practice, but also find that elusive sense of purpose in their drawing.

I argue that these methods are not as successful as they could be for three reasons. First, books that encourage imagination, using abstract terms, can leave students unable to translate that abstract concept into a method of making. Further, books that jumpstart imagination by encouraging students to look “in a new way” cannot help those students find the new way that might be personally meaningful. Last of all, journal writing, while useful in helping a student better connect to memories of personal frustration or success, might not be the best way to help students observe messages outside of themselves that they can develop in their drawing. Journal writing has this limitation because it focuses on the running commentary of the artist’s inner mind, rather than on the subject of his or her drawing. Journal writing is not a genre that directs one’s focus outward. It does not explicitly encourage the student to verbalize qualities in the scene that they might later visually communicate to others.

Still, I believe that educators are on the right track when they ask their students to use writing as a tool for reflection. However, I argue that another type of writing has a better chance of success. That writing is a type of descriptive study, which could be a reflective aid that explicitly helps students consider the attitudes, energy, and overall effects they would like to communicate to an audience. Descriptive writing requires the student to observe a scene, such as the coffee shop that will be described here, for one or two hours, and write about the look and feel of that scene, as well as the people who populated it over the time that the student observed that space.

In developing this sense of a place as it occupies time, students not only need to be taught to invent and compose a two-page paper that develops the story of place, they need to represent aspects of the scene through metaphor as well as other figures of speech. Metaphor might be an especially good tool for reflection and learning because, as Petrie and Oshlag (1993) point out, metaphor
produces a sense of the whole that encourages learning by experience. While metaphor in learning usually applies to metaphors that students are given rather than those that students construct, these theorists explain:

Piaget (1972) noted the distinction between ... assimilation and accommodation. During assimilation, we learn by changing experience to fit our concepts. During accommodation, we learn by changing our concepts to fit our experience. (p. 583)

By writing a descriptive study that includes developing metaphorical concepts that describe the scene, the student’s perspective might indeed change to fit their new observational experience.

Writing, for students of drawing, does not focus on improving the student’s grammar or style. It focuses on integrating three elements into the drawing studio to improve the student’s purpose. Those three elements are figures of speech and dialogue as they represent the experience of scene and person, as well as other statements that represent time as the experience of energy. As an added benefit, students of illustration might discover more value in words, and that valuing could prove useful in the collaborative arena of multimedia.

2. Purpose and Significance

In a discussion with students in a drawing class, I heard one say; “You have a talent, so you use it, but you don’t always know why.” I have personally struggled with this problem, looking for the purpose behind my work and how I could make that work express my point of view. Gestalt theory (Arnhem, 1974) notes that meaning lies not only in what is being represented but also in the compositional forces that exist within that representation. Sadly, I have too often found that manipulating contrast, unifiers, and negative space did not help me figure out ways to interpret and convey a particular situation. Similarly, reading John Ruskin (2009) was compelling especially when he commands that we focus on the lines because of what they tell us; that for the tree; “they show what kind of fortune it has had to endure from its childhood; how troublesome trees have ... pushed it aside” (p. 66). The problem has been, while Ruskin’s advice makes sense, those lines seemed to have no intention of revealing their secrets to me.

That frustration, and my accidental encounter with writing, led to my current stance. I argue that an elusive sense of purpose can be found when writing and drawing become purposefully intertwined. I maintain this perspective because of what I experienced as the participant in my own case study, a study that began when I enrolled in a new and required writing class for graduate students in Communication Design. In this class, we practiced writing the journal, profile, history, argument, “field guide to the ordinary” (which I now refer to as descriptive writing), popular exposition, and instruction. Because I was skeptical about spending time in a writing class, when I wanted to focus on spatial skills, I began keeping notes on any changes I noticed in my visual practice during the course of the semester. Importantly, only the descriptive writing exercise had a noticeable effect on my use of line and shape in subsequent drawings. Descriptive writing also encouraged a non-verbal sense of exploration that surprised me. I began to feel what Ruskin had described. I “felt” opportunities that I had not noticed before. I have since come to believe that five elements worked synergistically to achieve this effect. Those were: the use of figurative language, the need to capture interior experience, the over time observation of place and person, the iterative development of my text, and the subsequent opportunity to reflect.

My writing class had two main goals. They were training in the specifics of the genre, and communicating the presence of a human voice in the body of the text. We were given two weeks to create each genre. The voice we were searching for would later be defined as a “virtual author,” who was rational, or had an empathetic personality, or a unique point of view.

Writing is unique because it consecutively integrates scene with individuals as both move concurrently through space over time. Therefore, the writer must inhabit that space for enough time, so that he or she can discover its energy and particular look and feel. In my case, after inhabiting a local coffee shop for three hours, I discovered its:

French vanilla, 1950s flavor ... where you can have public, private conversations in the style of the composer Charles Ives with his kind of dissonance. Incompatible tempos are heard simultaneously—each voice in a different key.

That place took on a retro metaphor, tapping into my history and
my personal interests, and producing a world in which a “slow, steady andante” would become a “light-hearted allegro.”

After this experience, I found myself with a growing awareness of my own vantage point. Like the scenes I drew, I too was a character rooted in a unique place and time. Examples of my drawing might or might not fully communicate my process, but the process suggested to me that a verbal connection to the visual representation of place might be a significant tool to help illustrators learn what to do with their talent. I operate with the assumption that there is nothing in life better than having a purpose for one’s efforts and (given food, shelter, health, and friends) few things worse than having talents that lack focus. However, aside from my own experiences with writing for discovery, what other evidence would lead me to believe that this approach has any chance of success?

3. Visual Understanding

The thinking that underlies visual communication can arguably be placed into two major categories. They are the sensual and the perceptual. Broadly put, sensual theories (including Gestalt, Constructivism, and Ecological theory) tell us that image content is form revealed by light, while perceptual theories (Semiotics and Cognition) posit that audiences bring meaning and human associations to visual encounters (Lester, 1995). I argue that descriptive writing integrates an interest in form with associations that help students connect new ideas to their existing contexts.

Gestalt theory is a toolbox of sorts that the artist uses in creating a composition. This toolbox includes: dot, line, shape direction, tone, color, texture, proportion, and motion (often implied). Together, they produce tension and rest. The tools can be used to communicate when, for example, similar elements, or closely spaced elements, or aligned elements are joined as units by the eye to cause whole pictures to be formed. These elements create harmony on the page, but that harmony can also create boredom within the composition. Therefore, the most dynamic relationships take place not by creating these necessary harmonies, but by including strong contrasts, which according to Gestalt theory, helps to give meaning to the creation (Dondis, 1981). In her influential book, Donis Dondis considers the relationship between form and purpose when she channels McLuhan, who sees “... visual involvement and participation in the act of seeing as part of meaning” (p. 11). However, while developing compositional forces in part-to-whole relationships can be rewarding, the process ignores the idea that sometimes the artist needs to know his or her own intentions more explicitly. That aspect of meaning might additionally explored from the angle of languaging.

4. Verbalizing Visual Understanding

John R. Hayes, in his work A New Framework for Understanding Cognition and Affect in Writing (2002), provides both direction and insight that can be extrapolated to suggest possibilities for writing in visual culture. By revising an earlier model (Flower & Hayes, 1981), he divides writing into two major components, the task environment, which includes social and physical environments, and the individual who works with cognitive processes, motivation, or affect, as well as his or her long term and working memory. While writing modifies its own task environment, which means that the shape of the text “so far” leads to changes in the shape of the text to come, drawing does not always possess this same malleability. A drawing that is heavily revised in the midst of the task soon looks overworked, having none of the strength of purpose that draws the viewer to a performance that should show the artist’s confidence in the medium. Instead, a drawing that shows evidence of being repeatedly modified in its own task environment can look tortured. One that’s not modified can look tentative. As Hayes notes, the composing medium (in writing) has a great effect on the way in which the composer approaches the work. If the composer of drawn forms has the opportunity to explore her intent in words before working it out in line, shape and tone, the outcome might not be the voiceless representation seen so often in student work, work that otherwise would demonstrate the student’s hardwired skills. In writing, revision controls structure within an existing composition. In drawing revision within the existing composition often destroys structure. I argue that reflection through languaging would seem to be a useful way in which to imagine and play before the drawing process begins.

As Hayes also tells us, the cognitive function of textual interpretation creates internal representations, which on reflection
produce other internal representations that in turn lead to text production. In other words, the text is an avenue for invention. I believe that text, as an avenue for invention is the process that I experienced while creating, then reading and revising my own descriptive writing. Reading my own text produced other internal representations that manifested themselves as a modification of my own task environment. I could then approach the frighteningly clean sheet of paper with a more playful understanding of my intent.

The drawings I was doing before I had the opportunity to explore this type of writing were form revealed by light, but without significant human associations. The lines revealed nothing but the edges. The shade revealed nothing but the shadows. In writing my descriptive study about the coffeeshop, I had to become more aware, not simply that human associations exist in space, but also that those associations had awkward elements that should not be “airbrushed.” I saw that difference empathetically when I wrote:

People who carry coffee to their tables lead from the cup. They assume a predictable geometry as they stride from counter to chair: the arm, bent at the elbow, keeping a steady line perpendicular to a carefully erect neck, walking with awkward determination toward tables and chairs.

Because I not only observed, but also put language to the observation, I began to see the individual struggle as each person tried to make a clean get away simply because he or she needed the experience of a fine Kona Volcanic. I began to see the purpose of the place as unintentionally playful:

A few words drift in and out here and there. “So, you want to do this?” “...it’s eight o’clock...” “I put on my little tie...” “...and call my mom and I was telling her...” “...but other wise I have no doubts...” “...because quite frankly, you’re no longer in her dreams.” It sounds like the children’s story game where each child adds a new word to the tale. As time passes, the stories come and go in waves, moving up and down in volume from internal cues. Here, the sense of time, the energy that comes in waves of volume, is emphasized more than a particular story about lost love that might be hiding in one part of the room. But when focused on a particular story, the characters were not portrayed as they ideally might have wished:

A blond whose hair could use a comb slouches her upper back against the seat, butt pushed forward, legs on the rung of the chair beside her in an “I live here” look as she pencils in notes on her “Major topic abstract.” Jeans, sweatshirt, and work shoes complete the uniform of a student who’s escaped the soft pianissimo of the library for the louder moderato of the coffeeshop. Now the focus is not simply how her butt lives in the chair. That butt has an “I live here” attitude. Position has purpose.

By verbalizing what had been only implicit human associations, I found personality in places that I had been representing purely as form revealed by light. That practice had bored me and made me question the value of my marks. My newer work suggested something I had learned about the place that I had not tapped into before. The scenes were more compelling to me—warts and all. While the drawings I produced of pre and post descriptive writing would be difficult to reproduce here, it is possible to show the change that emerged for me almost immediately after sitting in that coffeeshop and writing about the experience. In Figure 1, below the drawing on the left is merely line that reveals edges and shade in order to show shadow. It was a typical example of my drawing. In fact, it was more tentative than what is shown here, because I darkened the lines in Photoshop so that the drawing doesn’t disappear in reproduction. However, in the drawing on the right, I began to consider what I wanted to reveal and what I wanted to hide. The process of writing opened possibility. The difference between the first and second drawings is the difference between an interest in only capturing the space versus being visually influenced by the residue of statements that captured unseen experience. The lines on the left are all about the edges. They simply hope to identify a recognizable human form. But the drawing on the right not only adds shading to lines, and focus to shading, it also captures an aspect of figure drawing that I’d observed by never thought to express. The model in the post-descriptive drawing is hired to be nothing more than another object. There is no person here. In fact the bowl that the model is holding has more presence than his face. My experience was one of a student being guided by the residue of insights—where making marks became the deep-seated experience of observing the unnoticed. The pro-
cess was an avenue for invention. By observing people who “lead from the cup,” and know that they are “no longer in her dreams,” I was also able to tap into the memory of rooms where models were not people until they put their clothes back on.

Representing form through tone and line is a problem-solving situation. It requires the evaluation of alternatives before the artist can begin to know the steps that will help him or her achieve the intended result. Writing allows that time for reflection, which can’t be as easily considered within the circuitry of either long term or working memory. Words on paper allow time for inferencing to take place (Hayes, 2002). Inferencing is the process whereby new information is created from old. Hayes notes that a strong visual-spatial component seems to be present in representing that information. Perhaps this component is one that can be tapped with measurable success by the student of drawing.

Existing perspectives on drawing have provided a useful toolbox, and those palette options have an important place in the artist’s development. However, writing the descriptive study might help build reflection and inferencing, and that in turn could lead to improved voice and purpose.

5. Conclusion: The Next Step

This work leads to the hypothesis that writing descriptive studies created in one sitting, will help students of drawing find their own voice and purpose. A full-scale research design is beyond the scope of this paper, and should only be contemplated with the input of the instructors participating in the research. That said, the experiment could be triangulated by including three methods of assessing the effect. Possibilities include:

- Likert scale surveys at specified times throughout the process using questions that approach the information from a variety of angles in order to avoid problems of interpretation,
- Blind-rated microthemes of student viewpoints regarding their pre and post-treatment goals,
- Holistic, independent assessment of student pre- and post-treatment drawings.

While the last measure is not a process assessment, it could give important information illustrating a visible audience effect, which after all is the point of the communicative process.

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New possibilities for the printed book
A case study - “Livro (de actividades) para Massajar a Imaginação”

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Abstract
This paper will address how the activity book “Livro (de actividades) para Massajar a Imaginação” (“(Activity) Book For Massaging Imagination”), which was developed as a final project for the Masters in Illustration and Animation, helps to encourage drawing and how it helps the readers to know more about themselves and their surroundings. When the interactive digital book seems to gather more and more attention, the printed book must create mechanisms that will also capture the readers’ attention, either by using different materials and printing techniques, new forms of bookbinding or new editorial concepts, or by designing different ways to interact.

Keywords
drawing, graphic diary, activity book


1. Instituto Politécnico do Cávado e do Ave - Polytechnic Institute of Cávado and Ave (IPCA) Masters in Illustration and Animation Barcelos, Portugal
1. Introduction

This paper presents and analyses the practical project “Livro (de actividades) para Massajar a Imaginação” (“(Activity) Book For Massaging Imagination”), carried out under the Masters in Illustration and Animation at the Instituto Politécnico do Cávado e do Ave - Polytechnic Institute of Cávado and Ave (IPCA).

At a time when drawing is so popular and a subject of many discussions, we present a practical project where the readers/authors are invited to tell their story by drawing it. Since we resort to visual devices to mediate most of our relationships with our surroundings, this book offers a return to “the fabric of the world” (ROBINS, 2003, p. 52). This provides new possibilities to get in touch with the real world to those who are born into this cultural setting, where “the sense of touch, an intimate sense, has been repressed and undervalued” (ROBINS, 2003) and the modern sensory experience has become powerfully attached to sight, due to the growing use of visual mediators in our relationship with the world around us. With this project, our aim is to remind those who are born in this universe of the relevance of hand drawing, such an individual and unique activity. This is a book that celebrates drawing and the singularity of each reader. With this proposal, we hope to inspire the readers to create their own graphic diary.

We also intend to research and deepen our knowledge on these kind of books that promote drawing, that offer ideas on what to draw and that stimulate creativity. We also intend to understand the relevance of designing mechanisms that capture and stimulate the readers’ attention, especially when engaging them in the creation of the book. As such, the book becomes cooperation between author and readers. Our goal is to design a book which encourages people to draw in an accessible way, even without any kind of formal training in drawing.

Printed book vs. digital book - contributions of graphic design

With electronic devices becoming more and more popular, some might say that the printed book is dead, but to others it seems more alive than ever. Unlike other media that go out of fashion and aren’t used any more, as new, faster and more immersive media take their place, books continue to be an appealing and stimulating piece (BOOM, 2008). As Irma Boom said (2008), “books became much more interesting because of the internet (...) the book gained status (...) In the older days, a book was made for spreading information, but nowadays we have the internet for spreading information”. So, when you design a book, you try to make it convey something that the digital book cannot - a sensory experience where concerns other than text development are at play, like type of paper, paper weight, printing, cover texture, illustration, bookbinding, endpapers, to name a few. On the other hand, mobile devices have enabled new book concepts in digital form. Such has added new features to the reading process, which now includes multimedia elements that broaden our reading and browsing alternatives. New book concepts arise in digital media, like adaptations from traditional books (for example, 2010 "The heart and the bottle" or 2013 "Teddy’s day") and adaptations from animation movies (2011 “The fantastic flying books of Mr. Morris Lessmore”), which include sound, animation and several activities that enable the readers to interact with some objects and to perform different tasks, such as drawing, making a puzzle or play the piano; books specifically designed for digital devices (e.g. 2011 “A present for Milo: A touch-and-surprise storybook” or 2012 "Sneaky Sam"); or other hybrid concepts, such as gamebooks, that allow the readers to intervene and change the story (like 2010 "Gamebook Adventures", which is also an adaptation from a printed book).

Trying to keep up with this trend, the printed book has tried to develop mechanisms to allure readers, offering greater interaction and originality when it comes to graphic design. As such, several printed books have been published offering a great diversity of materials and ways of interacting, promoting cooperation between author and readers and enabling the latter with more power over the story (much in the same way as interactive digital stories, games, etc.). Amongst them, we present a few examples that stand out, either by their use of innovating and appealing materials or by the different ways of interacting: “Mar - actividário” (2012) (“Sea - actiphabet”) by Ricardo Henriques and André Letria, invites the readers to perform close to 80 sea-related activities, like creating a jellyfish from recycled materials, a paper boat, an ocean in a bottle, seaweed stamping, as well as suggesting a graphic
diary to record their observations of the natural world; “Keep our secrets” (2012) by Jordan Crane, on which, in order to see the illustrations, the readers must use a finger or a hair-dryer because the ink is heat-sensitive and changes colours (from black to other colours); “Nueva York en pijamarama” (2012) (original title “New York en pyjamarama”) by Michaël Leblond e Frédérique Bertrand uses a cinematic technique named ombro-cinéma, which portrays an surprising illusion of movement for each illustration by over layering an acetate film with a grid on every double page spread; in “O Cavaleiro Coragem!” (French edition “Le Chevalier Courage”) (2011) by Delphine Chedru the readers choose how the story goes, much like the old gamebook collection by Ian Livingstone and Steve Jackson, “Gamebook Adventures” (1982) also adapted into digital form. Lastly, we would like to mention the puppet-book “Tem calma, Boris!” (original title “Calm Down, Boris!”) (2012) by Sam Lloyd, which includes a real puppet to be used by those telling the story, thereby making reading the book a more dynamic process.

Along with the previous examples, aimed primarily at young readers, many other books have drawn attention among the adult audience, either by using innovative materials and printing techniques, new bookbinding forms or by presenting new editorial concepts that “celebrate the tactile experience”3, as one can observe in the book “Fully Booked: Ink on Paper. Design and Concepts for New Publications” (2013) published by Gestalten, that introduces current publications and experiences and future possibilities for the printed book. Here we highlight three books that have stood out for diferent reasons: “Sheila Hicks: Weaving as Metaphor” (2006), created by the renowned designer Irma Boom, has bold sophisticated graphic compositions and uses graphic design to either emphasize or create certain contents and to build tension and surprises. The book is also remarkable for the rough edges of its pages, reminiscent of the fabrics used by the artist. As Rawsthorn said (2007), quoting Sheila Hicks when she was mentioning the work by Irma Boom: “strong design sense, very original use of typography, and sensitivity to paper and printing”, “Well done: Podravka annual report” (2007), by Bruketa & Zinic, is an annual financial statement for a food industry company, which includes a cookbook that must be baked in order to be read – “the report features blank pages printed with thermo-reactive ink that, after being wrapped in foil and cooked for 25 minutes, reveal text and images.”4. As a final example, we present “Talk back” (2006) designed by the founder of The Bubble Project, Ji Lee, that aims to fight back corporate marketing and advertisements in public spaces. This book presents several images with speech bubbles with different written messages, placed around all manner of public spaces, and offers stickers so the readers can carry out the project where they live.

**Art Status Quo**

After an analysis of the most important books that invite the readers to participate on its creation and that focus on subjects and episodes of the readers’ life, we can see there are books that teach and show drawing techniques, aimed towards a younger audience (e.g. “Let’s make some great art” by Marion Deuchars, “Nina’s book of little things” by Keith Haring and “E tu rabiscas?” (original title “Do you Doodle?”) by Nikalas Catlow) and there are also books that invite the young/adult readers to create a biography of sorts, displaying exercises around life episodes, around the readers’ likes and dreams, yet focusing mainly on text (e.g. “Memorandom: A Journal for Lists, Memories, and Miscellany”, 2010, by Potter Style and “Listography Journal: Your Life in Lists”, 2007, by Lisa Nola).

But our main reference has been the work of Keri Smith, author and illustrator. Her books are a reference for their kind of record (by hand and very casual) and for being activity books for adults that remind them of the thrill of being a child with its fondness for discovering new things. Broadly speaking, the books by this author encourage readers to pay attention to what is commonplace/trite, with inspiring sentences and thoughts by famous people, giving way for readers to experiment and ill in with their story. The close relationship between text and image is another major feature in Smith’s books, as well as the hand drawn compositions that include typography, illustration and photography. Just like in the previous examples (aimed towards a younger audience), there is room for the readers’ intervention by drawing. “Wreck this journal” (Keri Smith, 2007) offers other technical possibilities beyond the more traditional ones, like
ripping, hammering or burning the pages (the author’s goal is for readers to turn this book into an experimental lab) and “This is not a book” (Keri Smith, 2009) suggests rethinking the purpose of a book beyond the tasks it was originally created for. The main difference between Keri Smith’s books and our book, developed as a final project for the Masters in Illustration and Animation, is that ours is more about readers and their story and less about their surroundings.

Our proposal is creating something new, aimed towards an adult audience, with or without drawing experience - an activity book with an autobiographical hint where readers are invited to draw their story.

It must be noted that during the last two years (2012 and 2013) at least three similar books have been published, which validates the relevance and current interest of a project such as this. They are: “The Scribble Diary” by Lisa Currie (2012), “Fill in the Blank: An Inspirational Sketchbook” by Vahram Muratyan and Elodie Chaillous (2012) and “Drawing Your Life: Learning to See, Record and Appreciate Life’s Small Joys” by Michael Nobbs (2013).

**Project presentation**

The practical project is the result of all these research and subsequent findings and is materialised in an adult activity book titled “Livro (de actividades) para Massajar a Imaginação” (“Activity) Book For Massaging Imagination”) (fig. 1). This activity book intends to promote practising different kinds of hand drawing and to offer ideas on what to record. It also suggests the readers to take a look at them and at what is around them from a less ordinary and more focused perspective, paying more attention to small details. Ultimately, our goal is to motivate readers to create their own graphic diary. Even the book’s structure, gradually losing its words and images until all that remains are blank pages, emphasizes this goal. The book will remind the adult of what it felt like reading a children’s book, especially since it has more images than text, it has a better connection between text and images and it asks for the readers’ participation. The book invites readers to complete its design with their story and with all that is around them, resorting to brief sentences and artwork as a starting point for each activity. As one of our goals is to provide readers with a chance to experi-

ment a broad range of materials (since this is a book for people with or without formal artistic training), we chose paper over digital support. Paper is the ideal support to get to know the real properties of the material: because we have to touch them, we get a real feeling of their materiality.

This is an opportunity for the readers to know themselves better and to be able to record a little bit of their story on a book. We approach this idea in two different ways: the first is quite literal, as the activities are autobiographical (as shown afterwards); the other is less obvious, since how we draw and what we draw is also a way of representing ourselves - even if we do not pay it much attention to it, when drawing “we discover reasons to explain what we like, we define an aesthetics and the ability to make judgements on beauty and ugliness” (Bottoni, 2004, apud SALAVISA, 2008, p. 30). The activities are an invitation for readers to self-examine their personality, to record aspired goals, to imagine something or to record what is around them - essentially, the same one would do spontaneously and casually with a graphic diary.

This way, the book tries to show the readers that drawing can be a very rewarding activity. We can make a note of reality, of what is inside us, and that note will go on forever - we turn it into a drawing that later on will give us memories, snapshots of moments and feelings (CABEZAS, 2001).

That way, each book will be unique, as each person has their own story, their own experiences and their own way of perceiving the world. Instead of hiding our uniqueness (as we are taught to do as a child - «to be like the others»), in this book we are encouraged to show it and celebrate it.

**Target audience**

This book is geared towards an adult audience, even though it can be read/created by a much younger one. But a younger audience will not make full use of the proposed activities, as they will lack experiences and a certain distance in time in order to be able to analyse and compare some subjects.

So, where could we find this book inside a bookstore?

This is a hybrid book, sharing some features with children activity books, other features with the picture book and even some features with educational books for a younger audience. But this
book also carries linguistic and visual messages that can only be understood by an older audience. For example, Keri Smith’s books are usually displayed in the Graphic Design shelves in some of the bookstores we have visited, supposedly due to the attention given to its compositions and to the fact that it is an activity book for an adult audience. Or is it because there isn’t a specific section for this kind of books? These books will be read by people related to creative professions, by curious parents and educators and by adults with an open mind and yearning to draw. As a matter of fact, Keri Smith’s books aren’t about design nor are they books for people who enjoy design (although the target audience might be similar). They are books for people from all areas and they should have a dedicated section; albeit one might say that there aren’t many books of this kind, their number is steadily growing.

**Activity book - structure and contents**

The book has three parts: the first has an educational purpose, the second is an invitation for the readers to perform the activities and the third is the graphic diary, which we hope the readers will be able to fill in on their own.

The first part teaches readers “how” to draw, how to record what one sees, with which type of drawing and techniques, along with quotes by other authors on the creative process. The book begins with an adaptation of an excerpt from an essay by Christopher Grubbs6 on the act of drawing, followed by a comic like illustration on that excerpt. Then there is a double page spread presenting the necessary material: on the left page, the tools, drawn with the material they represent; on the right page, sentences that introduce the other needed material, like the readers’ story, their experiences, and their way of perceiving the world. The following pages mention the different types of drawing - observational drawing, the first one learns when learning how to draw; creation/invention drawing, where one seeks their own language; several exercises or drawing typologies, common during the learning stage of this art; and a double page spread on some art movements in the history of painting, so readers gets more acquainted with different ways of representation and with other technical possibilities. While the readers read on all their technical options, the text reflects their meaning, acting as a visual example of what it is saying. The next double page spread is to be used as a resting spot for the readers after so many visually busy pages. The readers are also invited to use this page as place to loosen their hand and get ready to start the proposed activities.

The first part of the book was drawn like a graphic diary: crossing of different styles and materials, cursive writing, absence of composition rules, apparent lack of narrative logic. Its text is written in a very transparent way, revealing the thoughts of its authors, and it is also influenced by other authors’ quotes, like Christopher Grubbs, Paula Scher and Alexander Pain, as well as other historical influences, like the referred art movements in the history of painting.

The second part of this book is about “What” to draw. Each page has a composition with blank spaces (for the readers/authors) and a sentence to guide each activity. The blank spaces have different shapes, according to the presented activity (fig. 2). Likewise, the small font text under each sentence suggesting a drawing material is also related with the activity (fig. 3). Most of the activities have autobiographical themes, but these will gradually become less and less personal and will focus more on what is around the readers - what they see and what they imagine. The activities are a portrait of the readers, as they enable them to tell their story, by recording memories from their past, likes, aspired goals, psychological profiling/introspective analysis, physical profiling, costumes and dreams.

The cube activity introduces the third and last part of the book - the graphic diary - as it is not expected to be performed on this page alone, but in all the following pages. The readers are supposed to intervene completely on their own, without any guidelines or technical suggestions. Just as proposed by the sentence next to the cube (which has a suggested drawing theme on each of its faces): “As páginas que se seguem são da inteira responsabilidade da minha imaginação” (“The next pages are the full responsibility of my imagination”).

Referring the presented contents/themes (observation, reflection and creation), we can set a parallel between the contents of the activities and the most common graphic diary typologies, because the activities invite readers to see-record better, to think
and to create by drawing.

**Formal choices**

**Layout**
We chose the vertical or French layout, size A4, because it is similar to children activity books, but it is also a typical layout for graphic diaries.

**Cover**
Our first contact with the book is through its cover (fig. 1), “which is, first and foremost, one of the decisive spaces where one can set up a reading pact. It purveys information that allows us to understand the discourse type, the narration style, the genre, thus creating certain expectations for the readers.” (LINDEN, 2011, p. 57). We chose a black cover and back cover (1mm Bristol paper) with the title written in white, like a blackboard with chalk writing on it. This creates a reference to our past and presents an educational feature, just like the first part of the book. Although there is no sentence suggesting it, the blank space on the cover can be used by the readers/authors, as we expect them to draw on their own by the end of the book. The title is written with a cursive font (just like the book contents), using synthetic charcoal. The charcoal colour was then digitally reversed. The handles on the right side of the cover are a metaphor for the wings of imagination and are also related to the idea of travelling (both mentally and physically), a concept that takes us back to the early days of the graphic diary, when it was to be used outdoors.

**Bookbinding**
We selected the most common binding for activity books - A4 four sheet signatures - allowing for the book to be opened at a 180 angle.

**Paper**
The chosen paper was cream 150 g Munken Pure, the perfect paper for drawing with different materials.

**Technique**
All drawings were hand drawn and afterwards digitally edited and organised with Adobe Photoshop software. Different materials were used for the drawings in the first part of the book, like pencils, pens, nibs, pastels, watercolours, charcoal, cut-outs, stamps, and others. For the second part of the book, the activities, we used stick synthetic charcoal (mass drawing) and 2B graphite pencil.

We chose to create negative/positive shapes instead of using line drawing because we believe this language can be combined with a greater number of types of drawing, as each readers/authors will have a unique stroke and expression. On the other hand, and since the readers are invited to use different materials, these graphics do not compromise the diversity of drawings. That is also why we do not use colour - we expect the readers to be the ones using it.

**Text design plasticity**
When choosing a font, we must take into consideration its story, its current significance and formal qualities (LUPTON, 2004). As such, we choose to handwrite the text, emphasizing the manual quality of activity books, as well as graphic diaries.

In the first part of book, there is a great plasticity in the linguistic messages, where “the text seeks to visually explain its meaning” (LINDEN, 2011, p. 94), like in the double page spread that presents different drawing typologies (fig. 4), the page presenting the painting movements (fig. 5) or the page with Paula Scher’s sentence (fig. 6). In this last example, the way the text is written strengthens its meaning - “It took me a few seconds to draw it, but it took me 34 years to learn how to draw it in a few seconds.”

The deliberate difficulty faced by the readers when reading this sentence emphasizes the idea that it takes lots of practice to draw properly and it is a time consuming activity. To intensify this idea, each letter was drawn and erased multiple times, alluding to the relevance of making mistakes as a way of learning when drawing.

**Conclusion**
During the making of this practical project, we carried out a few tests to make sure that the text/image was easily understood. The activity book was presented to 22 individuals, of which only 12 had formal artistic training. Using these individuals’ reactions and/or objections, we slightly tweaked the text/image, because some of the used words and symbols were too specific to be understood by someone with no artistic training. The test subjects had a positive reaction to the book and expressed their interest in its publication. In general, the test subjects pointed out the educational features of the activity book and how these crossed different themes, allowing the readers to create an idea of what they were/
liked/planned/imagined once and of what they are today. Some individuals, especially those without artistic training, mentioned that this would be a good way to start drawing: sometimes, they feel the urge to do it, but don’t know where to begin, what to draw or how to draw. Some also said that this would be an interesting project to make at different times of their lives, to understand how much they have or haven’t changed. Others said that it would be compelling to see the same activity performed by different authors (something that had already crossed our minds).

We crossed out a few activities during the making of this book. Some were left out for aesthetic reasons, because their composition didn’t fit the previously established grid, and others were left out for thematic reasons, as there were activities with similar themes. We also thought of including different types of paper at the end of the book, so readers could try drawing on several supports (grid paper, lined paper, different paper textures, colours, density and thickness). But this would have made the book too expensive. Also, from a graphic and aesthetic point of view, after several pages where readers were guided through, it was imperative that something completely opposite had to be presented. As it was previously mentioned, one of the main goals of the activity book was that readers would be comfortable enough to begin a constant practice on their graphic diary and stopped feeling frustrated before a blank page. So, we considered it was suitable to confront the readers with the most common graphic diary - with blank pages.

By and large, we have met our goals, mainly when it comes to researching information and analysing this subject, as we have increased and deepened our knowledge of this kind of books: printed books that encourage drawing, that give ideas on what to draw and that stimulate creativity. We also understood how the activity book can be a motivation to draw, by giving ideas on subjects and by suggesting several ways of representation. This is an ongoing project because it has shown new fields for research on a growing current subject. We hope that the activity book will entice the readers’ curiosity to find new ways of representation and that it will teach in a fun way. Finally, we hope that readers will begin drawing as a constant practice, recording their lives and organising their stories in what is (sometimes) their best everyday companion.

References

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New possibilities for the printed book - A case study - “Livro (de actividades) para Massajar a Imaginação”

Catarina Gomes
Abstract
The authors address the evolution and present state of the new genre of comics journalism in this paper. Comics journalism is a relatively new art form: It combines a journalistic approach in terms of content and research methodology with the use of comics as a medium. We contextualize its emergence in the history of comics and graphic novels and investigate the question of journalistic authenticity, integrity, and subjectivity. Furthermore, we define the current state of the art and explore the potential of future developments in the field.

Keywords
Comics Journalism, Graphic Journalism, News, Factual Reporting, Nonfiction Storytelling, Journalism Ethics, Subjectivity, Objectivity.
1. Introduction

In recent times, a growing phenomenon draws the attention to a relationship that conflates aspects of hard journalism and entertainment, fiction storytelling and factual reporting: comics journalism. Although still in its early stages of development, the medium is a rapidly evolving form of journalism that started in the mid-eighties, when artists and writers began producing serious non-fiction comics about current events [1]. The journalist and cartoonist Joe Sacco is widely considered the pioneering comics journalist with his two books on Palestine in the mid-1990s [2, 3]. Since then, several journalists have chosen this genre for news coverage and factual reporting and developed new forms: e.g. Dan Archer, Matt Bors, Ted Rall, Josh Neufeld, Susie Cagle, Sarah Glidden, Jen Sorensen, Patrick Chappatte and Erin Polgreen. The tablet magazine Symbolia was launched by Erin Polgreen in 2012 [4], the first multimedia magazine of illustrated journalism. In the course of the iconic or pictorial turn [5, 6], which is now turning up in daily newspapers and online magazines (whether in the form of photo reportages, interactive information graphics, videos or audio-slideshows), comics journalism is gaining momentum as a genre for relaying news.

Often comics journalism is also referred to as graphic journalism. However, the term graphic refers to a wide range of different visuals and entails many connotations. For example, Stovall uses the term “graphics journalism” and defines it as “a specialized form of journalism that uses graphic forms to present information.” [7]. Stovall focuses more on information graphics, charts and maps, and less on illustrations like comics. Therefore, we prefer the more precise term comics journalism to graphic journalism.

One might argue that comics are not an appropriate form for journalism because comics consist of fiction, science fiction, fantasy, drama, emotions, exaggerations and funny pictures. In contrast, journalism is based on facts, news and reality, and on principles like truthfulness, accuracy and objectivity. So, how can comics and journalism go together? They go well together if we do not regard comics as a genre but as a medium. In other words, an appropriate medium for representing serious topics, facts and news can also be the narrative format of comics, since comics are not limited to fiction and the use of funny pictures. In this paper, we outline the relationship between comics and journalism by giving insights into this new genre. First, we provide a definition of comics journalism and describe its main characteristics. In a second step, we look back into the history of non-fictional storytelling and graphic novels — the forerunner of comics journalism — and explore the different forms of comics as a medium for factual storytelling. The paper concludes with the current discourse on the inherent subjectivity of comics journalism that contrasts with the journalistic objectivity as a relevant principle of journalism.

2. Methodology

Before embarking on the main features of comics journalism, the methodology of our study should be touched upon. Since comics journalism is a new genre, we conducted a profound literature review on scientific articles about comics journalism and nonfiction storytelling. Many scholars have examined comics as a visual-verbal medium, e.g. [8, 9, 10, 11, 12, 13, 14, 15, 16, 17]. However, few have concentrated their research on comics journalism [18, 19, 20, 21, 1]. Stafford [18] is one scholar, who proposes an epistemological theory of comics journalism with focus on Joe Sacco’s war reportage.

Secondly, we searched websites that address comics journalism/graphics journalism, videos of conferences like the Graphic Journalism Panel (I) of the Online News Association [22], interviews [23] and articles in news magazines [24] as well as blogs on comics journalism. We are well aware that in the academic world sources like blogs are not regarded as quotable; however, since comics journalism is highly topical and because of the little presence of comics within the academia, many blogs and discussions forums have emerged in the internet to fulfil that role; for instance, blogs written by comics journalists like Archer or Polgreen offer a fruitful source.

Thirdly, we contacted comics journalists via e-mail to learn more about their view on this new journalistic form. The aim of our research was to take stock of the current state: Who are relevant comics journalists? How do they define comics journalism? What do they think about journalistic standards? What are strengths, weaknesses and constraints of comics journalism? Of
these four questions, the last leads us to the ethical discourse of this genre and to the current discussion on objectivity and subjectivity in journalism.

Fourthly, we started a comparative analysis of comics journalism primary sources such as; Palestine by Joe Sacco, The Photographer, Into War-Torn Afghanistan With Doctors Without Borders by Emmanuel Guibert, Didier Lefèvre and Frédéric Lemercier, The Influencing Machine by Brooke Gladstone and Josh Neufeld, Symbolia, A.D.: New Orleans After the Deluge by Josh Neufeld, and Dan Archer’s latest journalism project on human trafficking in Nepal. Our content analysis of the different topics and styles is still in a very preliminary stage and has not yet been finished. In this sense, our paper can be seen as a first step in developing a framework towards comics journalism.

3. Comics Journalism
Can comics journalism be labelled journalism at all? In this chapter, we try to answer this question, describe the main features of comics journalism and provide a definition.

3.1. Definition
The comics journalists Josh Neufeld and Ted Rall, whom we asked about comics journalism, define this genre as telling newsworthy nonfiction stories in comic form using journalistic techniques – in the same way that print reporters use words and photographers use cameras to tell a story. Similar to this definition, the author and knight fellow Dan Archer explains in his comic about comics journalism: “We research and investigate a story in the traditional way, but our story are filed as comics” [23]. He further states, “Yet combined with the interactive potential of the Web and Social Media, it’s more powerful and effective since ever.” Erin Polgreen, founder and editor of Symbolia, a magazine of comics journalism launched in 2012 as an iPad app, regards comics journalism as a “colorful mishmash of influences that include comic[sic], infographics, film, and autobiography” [26]. Indeed, Polgreen, Cage and Archer are particularly known for their interactive and multimedia comics. Interactive comics or hypercomics like Archer’s The Nisoor Square Shootings encompass, but are not limited to, photos, infographics (charts, maps and timeline), sounds, quotes, texts, moving images, animation and hyperlinks. Summarizing the statements above we come to the following definition: Comics journalism is a new genre of journalism that covers news and hard facts in the medium of comics whether print or online.

This definition, as simple as it is, already raises the question: Can comics journalism be labelled journalism at all? An argument for journalism is its newsworthiness and timeliness. In terms of Joe Sacco’s Palestine, which is considered as a pioneer work in comics journalism, Benjamin Woo [21], who interrogates the concept of comics journalism, disagrees that Palestine can be labelled journalism. According to him, “Sacco has effectively abandoned the traditional indices of newsworthiness; comics are labor intensive and slow to produce.” [21, p. 173]. Molly Scalon [19] refutes this claim, citing Tahiri Hamdi [27, p. 23] that work such as Sacco’s “addresses the need for a kind of literature that communicates to the present about a past that is unthinkable and which, in the case of the Palestinian narrative, has been intentionally suppressed by the dominant narrative.” In other words, while the story has been told numerous times, this particular angle has not been “broken” before Sacco’s Palestine. “How more ‘timely’ can one get than to break a centuries-old story that has never been told?” Scalon asks [19]. The factor of timeliness cannot automatically “downgrade” a comic journalist’s work to a nonfiction graphic novel. In the same way, one can argue that interactive and multimedia features, such as Snowfall by John Branch (New York Times), are not journalism, since Snowfall — a feature on the fatal avalanche in the Cascade Mountains in Washington State — also took several months for the production and was labour intensive. Nevertheless, this feature was awarded the Pulitzer Prize, an award for achievements in newspaper and online journalism. Moreover, if we look at Archer’s latest work about human trafficking in Nepal or Sacco’s reporting in Not in my country on unwanted immigrants (Fig. 1), we can find the required newsworthiness and relevance, which are basic principles of journalism. Furthermore, it is difficult to define the borders of newsworthiness, and admittedly, the lines between comics journalism and documentary graphic novel might blur.

Another criterion in this field concerns the dissemination through
public media. As Woo argues [21, p. 173], journalism is tied to media companies and news networks; in contrast, the work of the comics journalists often is produced without the legitimacy of a news agency or news network but released by publishers of comic books (as was the case with Palestine) or directly to the readers via the Internet. However, our research shows that media companies gradually realize that nonfiction comics have the ability to contrast with the impassionate and neutral tone of news reporting by telling an alternative narrative with an inherent subjective perspective; moreover, comics as a striking visual medium might attract new target groups. As a consequence, newspapers and online magazines like The Guardian (Fig. 1), the San Francisco Public Press (Fig. 2) or the Swiss Neue Zürcher Zeitung (NZZ, Fig. 3) have begun to pay attention to the comics journalists and support their work, albeit in a limited way [28, 24]. Besides this, Symbolia and Cartoon Movement [29] are publishing platforms for comics journalism and are dedicated to providing high quality journalism (Fig. 4).

3.2. Main Features

Comic journalism stands in the tradition of narrative journalism that combines accurate and well-researched information with elements of prose writing or fiction. Like narrative journalism, comics journalism qualifies to provide the private story behind the public story. Further, it is linked to photojournalism since comics journalists like Matt Bors, Patrick Chappatte, Emmanuel Guibert include photographs into their drawings. A pioneer work of photojournalistic comics is the award-winning story The Photographer by Emmanuel Guibert [30]. The Photographer uses the contact sheets of photographs that were taken by Didier Lefèvre, who is also the narrator. The photos are interwoven with Guibert’s illustrations (Fig. 5).

What differentiates comics journalism from other forms of journalism is the fact that the authors need to have a greater range of skills; a solid background in journalistic writing and skills in drawing. Like a radio or TV reporter, comics journalists go out to witness events, to research on-site, interview people, collect information and documents. However, instead of reporting verbally, they draw. They draw live sketches, take pictures, design infographics, integrate quotes into speech balloons, add texts and weave it all together in the framework of comics. That takes time. Reporting new information first or getting the scoop cannot be the aim of a comics journalist; comics journalists like Sacco, Archer, Cagle seek stories that leave a lasting impression on readers “long after the shooting has stopped and the ink on other reporters’ stories has dried” [31].

Since comics in a newspaper or news magazine are still deemed a form for fiction or funny cartoons, the framework of comics might weaken or devalue the work of the comic journalists. In order to ensure that their reporting is recognized as factual, serious, authentic and reliable, the comics journalists make their research strategies transparent by providing fact boxes, adding information graphics, and linking their stories to articles on renowned news sites. Moreover, in contrast to traditional journalism, in comics journalism the reporter’s role is more emphasized. As such, he or she can be present as a talking head or a narrator; but more importantly, he or she offers the piece’s moral standpoint and acts as a participant in the happenings that are described [1]. Sacco stated that as a comics journalist he becomes part of a story. “I mean, you can try to write yourself out of it, but you become involved. I think it’s more honest to show that your involvement affects people” [cited in 1]. This journalistic transparency embedded in the story itself is a further main feature of comics journalism.

Regardless of the different styles of the authors, one feature unites all; they report on hard news. News can be divided into soft news and hard news. Soft news consists of articles like celebrity gossip, human interest, lifestyle advice, consumer information, and entertainment news. In contrast, hard news can be defined as stories with serious consequences and are of public interest; this includes breaking news events, major issues, or disruptions to daily life [32]. Topics that have been covered by comics journalists in the recent years are, for instance, war (e.g. Afghanistan and Iraq), domestic violence, human trafficking, socially marginalized groups (e.g. immigrants and drug addicts). The reason for this can be explained by looking back into the history of nonfiction storytelling and graphic novels.
Several developments took place in the world of comics, which were crucial for forging closer connections between the fields of comics and nonfiction topics. It is important to know about these developments to understand why comics have been increasingly adapting serious content matter and even been used to communicate scientific and journalistic topics. Only this opening of the field enabled an increased awareness to use the medium in the service of information design. This is why we reach back to the very beginnings of a trend emerging from the late 70s and early
80s. This trend finally culminated in our present day situation of comics being respected and accepted as a serious medium for mature readers. The use of comics for education and information purposes has been increasing in strength with the boom and establishment of the graphic novel, which is essentially a comic in long form (i.e., length often equals that of novels). The graphic novel elevated the medium to the status of “serious literature” and greatly enhanced the presence of comics on the shelves of regular bookstores.

This development has been a long time in coming and was indeed, largely initiated by the arrival of Will Eisner’s 1978 book A Contract with God [33]. Before this date, works had been published that could be considered as having fulfilled the definition of a graphic novel. Contrary to common perception, it is therefore not factually correct to call Eisner the inventor of the graphic novel. However, the high quality of his work and his standing reputation as a comics innovator, together with the commercial trends of the time, ensured high public awareness of A Contract with God. Certainly, this impact of Eisner’s book did help to initiate a trend that has resulted in the acceptance of the medium as a serious art form and has subsequently opened new markets over the course of the last 30 or more years. This pivotal point in comics history also marks the ascent of the modern age of comics into the present as defined in this article. Although it is obvious that much development has taken place since then, the foundation for the present state of the medium was largely laid in the early 1980s.

Another groundbreaking work hailing from that period is Art Spiegelman’s famous graphic novel, Maus [34, 35] (Fig. 6). It was revolutionary, not only in its choice of subject matter (an anthropomorphized retelling of the holocaust using mice [Jews] and cats [Germans] as protagonists), but also in its use of meticulous research that was based on autobiographical information (Spiegelman interviewed his father Vladek, a holocaust survivor) and other topical investigations. Maus won a Pulitzer-Prize-Special-Award in 1992 (Pulitzer 2012). The journalistic methodology at work here again provides an interesting link to methodology and work ethics of journalists and designers who work in the field of editorial information. What both have in common is staying true to the facts where accessible and not to show what they “don’t know.” Admittedly, it is obvious that certain liberties were and are taken to serve the narrative flow of a graphic novel, even in Spiegelman’s Maus. But the depth of research and earnestness of approach created a template for a methodology that since then has found many successors. Despite transforming the main actors into animals, the underlying research is meticulous and exact. One might even argue that the transformation itself enables easier access to the fundamental facts through its higher level of abstraction. In a 1991 interview, Spiegelman stated, “these metaphors […] are meant to self-destruct in my book — and I think they do self-destruct” [36]. Paul Gravett [37] adds: “While their photographs and those of others from Art’s family enrich MetaMaus, he shrewdly showed very few photos in his graphic novel (Maus ed.), so that their intrusion forces us to question how documentary and ‘real’ any photo can be when compared to the precise compositions and levels of meanings distilled into Art’s deceptively naive cartooning.”

The groundbreaking effort of Art Spiegelman’s Maus constitutes itself in dealing with a highly controversial subject matter in the comics medium, clearly addressing an adult audience. Secondly, it used thorough research to address this serious topic, while adding a meta-level by its graphic approach. The positive reception by mainstream media and renowned publications initiated the rise and acceptance of graphic novels, which handled similarly serious content. This effect was crucial to finally leaving behind the stigmatization of comics as a genre for children or incompetent readers. Comics are presently increasingly accepted as a medium for adult and serious readers — a medium through which any genre can be expressed. It opened the doors for a plethora of works that used autobiography and/or research and reportage to create the graphic equivalent of a film documentary — the new genre of comics journalism.

5 . Subjectivity or Just the Facts?

As Archer depicts in his comic (What is comics journalism?), comics journalists often have to stem the argument that their work is not objective, but subjective, “because it’s drawn” [15]. This aspect of subjectivity that lies inherently in comics journalism...
leads us to the wider context of the current discourse on subjectivity and objectivity in journalism. Social media, blogs, and citizen journalism have been changing journalism. The upcoming news journalism seems to emphasize opinion journalism and tends to be more personal in preferring transparency to objectivity. This raises questions concerning objectivity as a journalistic principle in general. The comics journalists are well aware about the subjective element in their work. They deliberately stress the reporter’s perspective and therefore differ strikingly from the newsroom’s objective and unemotional tone [1]. Sacco states: “The fact is that no one can tell an entire story, everyone concentrates on what they want to, details are cropped out of photographs, stories go through an editing process. Every portrayal is to some extent a filter, and on that level, something that someone might find problematic. I’m not making things up even though there is an interpretive element to my work” [38]. Readers tend to forget that the work of print, radio and TV journalists also bears subjective traits because reporters can show only one segment of the reality. They have to select between different sources, different locations, different interview partners, and despite their efforts to write objectively, they believe something and have their own opinions that might impact what stories they tell and how those stories are told. Photographs are manipulated as well in order to dramatize images by changing the contrast, saturation, hue etc., coupled with the pressure to embellish photos to become more dramatic, aesthetic or newsworthy, and the effect the presence a camera has in changing the dynamics of any situation notwithstanding the intentions of the photographer [39]. In this sense, comic journalism appears honest since it has never claimed to be objective. Like animated documentaries, instead of attempting to silence its inherent subjectivity, comics journalism embraces it, emphasizing the journalist’s perspective by often visibly incorporating the reporter in the story. The honesty of animation lies in the fact that the recipients are conscious that the comic is but an interpretation of the subject.

The true essence could be the criterion of journalistic transparency and integrity, which is not compromised by the new genre of comic journalism. Like traditional journalists comics journalists commit themselves to the journalistic ethical standards and integrity that is defined by accurate factual research, authenticity, credibility and information backed up by solid evidence. In that respect, speculative assumptions or an overly subjective interpretation of facts should not be permitted at all. One might even argue that the subjective point of view of a drawing is less manipulative than the implied realism of a photograph. Some of the most famous protagonists of the genre, like Joe Sacco in Palestine [3], Safe Area Gorazde [40] or Footnotes in Gaza [41], combine well-researched details with a strong personal opinion — an approach that might be criticised in connection with the use of extremely expressive imagery. This, however, is just one of the myriad facets that this specific genre has developed.

6. Future Options

The ongoing negotiation of journalistic authenticity and creative expression are closely linked to the means of delivery in comics journalism. The choice and use of the artistic tools are informed by the narrative content, which needs to be communicated through them. New artistic options and digital methods can support and expand scope and depth of journalistic content. To conclude, we can look at the future trends for comics journalism by demonstrating new techniques, which have emerged in digital comics as compared to the traditional approach.

6.1. New Formatting Extending Beyond the Printed Page: Infinite Canvas

In his book, Reinventing Comics [12], Scott McCloud introduced the invention of a new digital format for comics: the infinite canvas. This concept for comics offers an infinitely scrollable screen that gives up the traditional panel layout in favour of a seemingly endless digital tapestry through which readers can move at their own discretion. Scrolling down or sideways resembles a horizontal or vertical pan in cinematography and opens new and interesting options for visual storytelling (Fig. 7).

The “infinite canvas” concept by McCloud (2000).
6.2. Added Motion: Motion Comics

If the information graphic communicates through a linear or non-linear narrative, this can be portrayed in the form of a motion comic. The motion comic makes use of limited animation and film editing techniques to create a new hybrid medium. These techniques do include limited animation, camera techniques, such as panning and zooming. This obviously offers many additional possibilities for comics journalism as it does enable the inclusion of moving images plus the implementation of cinematic language to convey crucial information more clearly and efficiently. In Fig. 8, comics journalist Matt Bors and video editor Caroline Dijckmeester-Bins clearly use the form of a motion comic. It remembers the second anniversary of Haiti’s earthquake and the impact of the earthquake on Haiti’s lesbian, gay, bisexual, and transgender community. Cinematic approaches such as camera moves, zooms and dissolves are used throughout, together with limited animation. The motion comic is additionally interspersed with live action video footage, adding to its authenticity and creating an interesting film/video/motion comic hybrid.

“A hypercomic can be thought of as a webcomic with a multicursal narrative structure. In a hypercomic the choices made by the reader may influence the sequence of events, the outcome of events or the point of view through which events are seen [...] it’s that element of reader choice and interaction that makes a hypercomic a hypercomic.”

Dan Archer creates annotated comics, which allow the reader to explore more deeply the underlying research of his comics (Fig. 9). Through mouse-clicks on select fields, new details and sources of information are made accessible; thus, providing a very immersive experience. It is certainly a prime example of how to integrate interactivity meaningfully with the concept of a comic and the intention to communicate journalistic information. Similar to the conceptual approach of Scott McCloud, Archer uses the medium itself in an interactive form to explain graphic journalism. Clicking on the highlighted panels will lead to new information, resources and connected websites.

This “meta-example” of the definition of comics journalism, by employing the medium itself, provides a fitting conclusion to this examination of present and future of comics journalism. As demonstrated here, the medium seems to have just begun a continuing development process. This process, as we believe, will further integrate journalistic approach and artistic interpretation, while constantly reinventing and expanding the digital form of its deliverance.

6.3. Added Interactivity: Hypercomics

While traditional comics are usually posted on the internet as scanned drawings or are digitally drawn, hypercomics make use of the properties of their electronic existence to create an experience that progresses far beyond what is possible with traditional print comics. These enhancements and extensions can encompass, but are not limited to sound, (mostly limited) animation, hyperlinks, non-linear breakdowns, interactivity (i.e., mouse-over, clicks) and spatial expansion. The British comic-artist and lecturer, Daniel Merlin Goodbrey [42], defines hypercomics on his blog as follows:

7. Conclusion

We argue that comics journalism is establishing itself as a major trend within the field of comics with the prospect of continued growth in the future. For a new generation of readers with high visual literacy, comics have become a fully accepted medium for nonfictional content addressed to an adult audience. Comics will
remain highly relevant in either printed and/or digital formats. The ongoing and irreversible transfer of journalistic content from print to digital is a further strong argument for this prognosis. The onset of the digital revolution started a transformation of the medium itself. While the printed form is still dominating the comics market, new digital platforms are rapidly gaining importance and have opened up the medium for entirely new possibilities. The new tools and options are particularly well suited to serve the journalistic approach because they offer multiple options for additional information and background detail. How visual journalism will absorb these rapidly evolving techniques and how these new tools and formats can be used to enhance and expand the possibilities of factual storytelling and news reporting remains to be investigated and is one of our next research steps in the field of comics journalism.

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The Diasynchronoscope

Bringing a new dimension to animation

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Bruno Mathez1, Frederic Fol Leymarie1 and Etienne Roesch2

Abstract

The Diasynchronoscope is a prototypical, experimental medium that draws on tropes from animation and Gestalt grouping principles to create the perception of apparent motion using concrete objects. In short, it is a way of animating without a screen.

Through documentation and discussion of selected artistic case studies we posit the Diasynchronoscope as an emergent new animation medium. Each realized artwork reveals more formalisms and boundaries inherent to creating affective screenless animation. The focus of this paper is on how traditional animation informs the Diasynchronoscope and, in turn, how formalisms developed in the Diasynchronoscope may inform current animation practice. The Diasynchronoscope system choreographs time in space by taking time-based techniques from animation and converting them to the spatial domain. This novel technique has been called the ‘diasynchronous’ technique and the system; the ‘Diasynchronoscope’.

Keywords

Animation, Gestalt, space-time, apparent motion, medium.


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1. Introduction

Diasynchronic artworks are viewed in an architectural black-out, where prepared 3D objects are arranged in paths such that they change incrementally in position, shape and/or orientation to create animation. Although nothing in the space actually moves; the objects are revealed through serial illumination in the dark room, sequenced using the technique of projection mapping. This technique enables creation of a dramatization over time, encouraging the common perceptual shortcuts of a participant to create sequences and a narrative from static abstract objects. Fundamental to the Diasynchronic technique is that the technique illuminates three-dimensional objects thereby preserving proprioceptive features of perspective, focus, depth perception and parallax in the spectator.

The Diasynchronoscope has been developed as a new medium for experiencing animation in an embodied way. This has implications for how the animations are formulated, as many of the traditional principles of animation have to be rewritten to accommodate the challenges and opportunities inherent to animating using concrete objects and allowing an audience to view the animation from any angle. Prototypical formalisms have been developed through studio practice and tested in exhibited artworks using the medium.

Although the influences and tropes in diasynchronic artworks draw on a diverse range of other media: animation, film, music, plastic arts, theater, magic, games and fairground rides, this paper focuses on animation as the paramount influence. It draws on case studies of exhibited artworks and studio experiments and uses traditional animation principles as a springboard for discussion.

2. Animation Principles and the Diasynchronoscope

The animation practice of creating the illusion of movement cannot be discussed without referring to the twelve animation principles first espoused by the Disney studios in the 1930’s. An updating of the principles, translating their application to 3D computer animation was explored by the animator and founder of Pixar, John Lasseter in his much cited 1987 Siggraph paper [1], and the fact that the twelve animation principles have stood the test of time to be adapted successfully to new methods of animating in 3D Computer Graphics and even utilized as enhancers to motion capture, means that many of them are still pertinent today.

Although the principles are specifically for character animation and we list them all, this paper confines its discussion to the five most relevant to the Diasynchronoscope. Some of the principles deal precisely with expressive quality of movement, some with how to direct an audience’s attention and some with how to animate economically. They are intended to be used in parallel (but

<table>
<thead>
<tr>
<th>Animation Principles</th>
<th>Common to the Diasynchronoscope</th>
<th>Diasynchronoscope Tropes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Squash and Stretch</td>
<td>Yes</td>
<td>Actually helps vertical perception/increases believability. Overlapping is found to be no longer as necessary as in traditional animation</td>
</tr>
<tr>
<td>2. Timing</td>
<td>Yes</td>
<td>Time is directly mapped to space and the speed of apparent motion in distance between objects ( d / t ) of illumination where ( d ) = variations of distance between visual stimuli (correctly visualized in space) and ( t ) = variations of stimulus duration</td>
</tr>
<tr>
<td>3. Anticipation</td>
<td>No</td>
<td>Although the Diasynchronoscope sometimes uses sound or spatial proximity to anticipate movement</td>
</tr>
<tr>
<td>4. Staging</td>
<td>Yes</td>
<td>Very important in construction for the light source (the projector). Interesting tropes revealed as the mobile operator replaces the camera</td>
</tr>
<tr>
<td>5. Follow Through and Overlapping Action</td>
<td>Yes</td>
<td>In the Diasynchronoscope it is even more vital that there is no &quot;dead&quot; space in the animation as this leaves the audience in the dark - so successive waves of movement pick up from each other in a sort of visual melody</td>
</tr>
<tr>
<td>6. Straight Ahead Action and Pose-To-Pose Action</td>
<td>Yes</td>
<td>Both are used. Demonstrated by concrete construction of supports for objects being positioned in space</td>
</tr>
<tr>
<td>7. Slow In and Out</td>
<td>Yes</td>
<td>Limited use of this - not as nuanced as for character animation</td>
</tr>
<tr>
<td>8. Arcs</td>
<td>Yes</td>
<td>Arcs suppress sequential eye movements, and the viewer follows movement in &quot;smooth pursuit&quot;. Aesthetic beauty of arcs revealed in holistic views – the arcs closely parallel the Gestalt principle of &quot;Good continuation&quot;</td>
</tr>
<tr>
<td>9. exaggeration</td>
<td>No</td>
<td>The Diasynchronoscope is not easily adapted to character animation</td>
</tr>
<tr>
<td>10. Secondary Action</td>
<td>Yes</td>
<td>This translates as causal effect in perceptual psychology, and is an essential trope in the Diasynchronoscope for modeling fast movement in space</td>
</tr>
<tr>
<td>11. Appeal</td>
<td>No</td>
<td>The Diasynchronoscope is not easily adapted to character animation</td>
</tr>
<tr>
<td>12. Personality</td>
<td>No</td>
<td>The Diasynchronoscope is not easily adapted to character animation</td>
</tr>
</tbody>
</table>
not exhaustively), and so any animation would expect to benefit by employing some of them. For the animator they provide a useful checklist for creating believable and characterful animation. The twelve principles are listed on the left of Table 1 and this paper will concentrate on the starred principles.

The concrete nature of animating inside the Diasynchronoscope reveals how closely animation principles parallel Gestalt laws of ‘prägnanz’. And a review of perceptual psychology literature reveals many discoveries in perception that actually closely parallel practitioner knowledge of animation [2]. The Diasynchronoscope has been developed working alongside perceptual psychologists [3], revealing considerable potential for fruitful cross-pollination between the two disciplines. The animated objects (or to use perceptual psychology’s term, ‘stimuli’) are grouped in space according to several Gestalt laws, the dominant ones that parallel animation principles being the laws of: Figure/Ground articulation, Similarity, Proximity, Closure and Good Continuation. [4]

2.1 The Diasynchronoscope and the ‘bounce’

The first thing we animated using the technique was, in the best tradition of animation, a bounce [5]. The resulting animation was something of an epiphany. Even in a half black-out, and illuminated at a coarse rate with compromised positioning, we could see it worked. In fact it did more than work; it looked like magic. It was an exciting moment as we realized that the handbook for what works and doesn’t work as apparent motion may need to be rewritten.

In animation the essential basic character or object being animated before any transformations is called the ‘hero’ object, (a taxonomical rewrite of ‘iconic object’ from semiotics). We chose to animate a block as our ‘hero’ object rather than the traditional ball because the angles would reflect the 3D nature of the object better and for the pragmatic reason that they were easy to make. In this rudimentary first version, the blocks are made from polystyrene, painted black and skewered on wooden sticks for ease of arrangement.

The first, and generally acknowledged most important, animation principle is that of ‘Squash and Stretch’. In Fig. 1, it can be seen that the cube undergoes ‘squash’ at the base of the bounce (no. 5) where it flattens, and ‘stretch’ in the following object (no. 6) where it kicks up after the bounce. Although when seen as stills, these deformations look extreme, when viewed in sequence, they appear perfectly natural. In his Siggraph paper, John Lasseter discussed this principle not just as being fundamental for animating facial movement but also for the way squash and stretch can be used to relieve the disturbing effect of strobing that can occur in depicting very fast motion. ‘Strobing’ becomes manifest when viewing cel (drawn) animation if the distance an object moves between frames is so great that there is no overlap and the eye begins to perceive separate images. There are a number of ways a modern animator would deal with the strobing problem – in computer animation we would add blur, in model we would never move an object beyond its previous silhouette from the camera’s point-of-view and, as Lasseter indicates, in clay and cel animation we would stretch the figure:

If motion is slow, then the objects overlap between frames and the eye smoothes out the motion. But if the motion is too fast, such that there is no object overlap, then the eye sees separate images and the object appears to strobe. A solution is to stretch the object to retain the overlap and smooth motion. [5]

However, it is essential for the technique of the Diasynchronoscope, that the objects have distinct silhouettes so that the projector may light them, and the initial assumption was that this would cause strobing and compromise the believability of the animated movement. This first experiment of the bouncing cube demonstrated that, despite there being no overlap between silhouettes, the cube was still perceived as being in apparent motion and the bounce to animate. It is our conjecture that the need for overlap to avoid strobing is no longer an issue, and that it is a hangover from
the days of screen-based flicker fusion. Animator Philip Kelly Denslow, (whose work in computerized animation tries to eliminate the biological creator) remarks ‘All definitions of animation have to be re-thought in the context of changing technology’ [6], and the practice of animating within the limits and opportunities offered by the diachronic technique has caused the authors to rethink some basic tenets of animation. The animation of the ‘bounce’ is a case in point.

Traditional animators’ recommend stretching an object towards a bounce as well as stretching it after the bounce (see figure 5). But it has been contended that the stretching of a ball as it descends towards the base-line squash as shown in numerous animation books and articles is an anomaly. One conjecture for its existence is that it may seem more ‘characterful’ for a ball to seem to ‘strive for the ground’, but in fact the second bouncing ball has greater ‘kick’ and is more characterful and believable. [7] It is more likely that the pre-bounce stretch was brought about in order to avoid strobism because the stretch covers the gap between animated objects and so is an unnecessary hangover from the days of cel animation and slower film rates when film was viewed running through a projector with blank shutter frames. Animating with the Diasynchronoscope confirms that the issue of overlap is simply not an essential concern today in animating in 3D computer graphics.

2.2 Choreographing Time

It is not important what goes on each frame of film; it’s the spaces between frames that are important.

![Traditional animation of a ball bounce vs. MacGillivray’s Bouncing Ball](image)

2. Including Lasseter in his SIGgraph paper. For a traditional example see ‘Timing for Animation’ (Whitaker & Halas, 1981) (p.33), the incomparable bible for animators, still studied over 50 years and ten reprint editions by Preston Blair (Blair, 1997 (1st ed 1949)) and http://www.idleworm.com/how/anm/01b/bball.shtml (key frame 6) for computer Flash users.

The Diasynchronoscope: Bringing a new dimension to animation
Carol MacGillivray, Bruno Mathez, Frederic Fol Leymarie and Etienne Roesch

Norman McLaren 1987 [8]

In the days of the ‘flicks’, when we watched a movie we perceived what happened on-screen as apparent motion, experiencing the film running as a continuous event, not as a series of stills, even though what lay between each still - fully half of what we saw - was a series of blanks. As the Canadian animator, Norman McLaren points out these invisible in-between spaces are crucial to the art of the animator, even more so in the Diasynchronoscope as, because of its spatio-temporal nature, time is directly translated into space, and the closest we have to a ‘shutter’ is the viewer’s visual attention moving in smooth pursuit as it follows the illuminated stimuli.

The second animation principle, ‘Timing’ (also occasionally appended with ‘and motion’) is the defining category for the expressive quality of any movement, and it is also demonstrated in this first illustrated experiment (Fig. 1). The animation runs at 24 frames per second (fps) where each frame represents 41.6 milliseconds. The typical rate for film viewed on UK television is 25fps, and it has always been the case that animators work to 24fps because of its easy divisibility. In keeping with another animation trope, this animation was shot on ‘twos’ where each block is generally lit for two frames. Because in the Diasynchronoscope, lighting a block is isomorphic with a frame of animation, by lighting an object for two frames we are effectively economizing on the number of animated stimuli required. Here the first four blocks and the last two blocks are illuminated for 83.2 ms (2 fps), block five (the squashed block) is lit for 124.8 ms (3 fps), and the sixth block for 20.8 ms (1 fps). This is one use of timing that is crucial to an animator’s art, but it is only one way of manipulating timing.

Fundamental to the Diasynchronic technique is that time is directly translated into space. When time is translated into space, the other dimension to timing is distance. Since the illumination is equal for most of the objects, only the distance between them defines the speed: speed = distance / time, so since time is a given, the greater the distance between objects; the higher the speed.

This is at the heart of an animator’s craft: the bigger the gap between objects; the faster that object will appear to travel. Close the gap, and the apparent motion is slower. To a non-animator this can feel counter-intuitive, but the

3. As animation is an arduous process, animators have always looked for short-cuts. Before CG animation, it was common for less expensive TV animation to use ‘shooting on twos’ or double up each frame, as animation will mostly still read at this speed and the sacrifice in quality can be perceived as negligible against doubling an animation budget. (It also means that you can be flexible in places where 12fps is too coarse and change up to 24fps for specific fast movements).
Diasynchronoscope demonstrates this in concrete terms. Objects that are positioned closer together will move more slowly than objects that are spaced further apart. (Illustrated in Fig. 2).

3. The audience experience
The fourth principle, ‘Staging’ is of major importance in the Diasynchronoscope. As with anticipation, an important objective of staging is to lead the viewer’s eye to where the action will happen so that they do not miss anything. This means staging actions theatrically so that the action is in silhouette and using high contrast between a figure and its background. Staging is fundamental to composing a camera shot so that an action is easily readable. Because the perception of movement is within the shared space as the viewer, the audience experience is other than seeing screen-based animation. With the Diasynchronoscope, there are two sorts of staging: i) for the viewer (in replacement of the camera) and ii) for the light source (the projector). In the bouncing block example of Fig. 1., the action sits virtually perpendicular to the viewer for maximum readability. Our first constructions placed the perceiver’s point-of-view close to the angle of projected light - later we found we could free ourselves from this constraint and use depth cues more as an undoubted strength of the technique. Because objects became more readable if they presented an edge to the viewer with more than one plane being lit, much time was spent orienting the objects and positioning the projector. Moreover because the viewer is not constrained to a single viewpoint (and with each installation audiences are increasing in numbers and are able to move with increasing freedom), this is an area of continuing experimentation. One considerable challenge has been overcome with the artwork ‘Stylus’, where for the first time an audience was encouraged to walk around an artwork, and see animation in the round [9]

3.1 Two Diasynchronic tropes: the audience as camera and synchronous sound
Part of the appeal for people experiencing the Diasynchronoscope is that it is an embodied experience that allows for individual opinion and interaction on something that has more than one formal identity. Because the artwork has different points of access (often as a time-based study and as a static art object that combines the time-based objects holistically), the two forms inform each other. The holistic artwork could be conceived as ‘the participant as a camera’ receiving many seconds of data in a single moment on a very slow shutter speed. This, coupled with the embodied 3D element, is a new and surprising sensation. Screen-based media has made us so familiar with tropes of cinema, and in particular cameras changing speed or reversing, we accept the same tropes in ourselves although there is no mediating lens or screen. In the Diasynchronoscope, in a reversal of cinematic tradition, the audience can become the ‘camera’. Rather than question the strange veracity of this, it is treated as an accepted yet ‘magical’ trope.

A major reason for enjoying the experience of viewing the Diasynchronoscope comes from the medium’s unique ability in combining animations with precisely synchronized sound. Sound is treated as a formal raw material that is morphologically equivalent to the iconic objects placed and lit in the Diasynchronoscope. This means that sound and visuals are intertwined in a way far beyond that of most screen-based media and this makes for a unique and comforting gestalt experience. This synthesis of sound and vision is a primary element of much of animation’s appeal, and was investigated at length by Michel Chion who coined the term for it of ‘Synchresis’, defining it as: The forging of an immediate and necessary relationship between something one sees and something one hears. [11]

In the Diasynchronoscope we are constantly challenging ourselves to create ‘bonds of inevitability’ between audio and visuals so that we create an added dimensionality to the way artworks are perceived. This is an original trope from animation, as observed in 1930 by the film maker and theorist, Sergei Eisenstein in a lecture at the Sorbonne where he concedes that the future belongs to sound film; Particularly Mickey Mouse films. The interesting thing about these films is that sound is not used as a naturalistic element. They look for the sound equivalent of a gesture or a plastic scene, i.e. not the sound that accompanies it in reality but the equivalent of this optical fact in the acoustic domain’ [12]

The enormous success of Disney and sound film was naturally viewed with suspicion and a certain amount of jealousy by skilled
practitioners and stars of silent movies.

Charlie Chaplin rather petulantly observed on first experiencing the frame accurate synchronisation of Disney’s Silly Symphonies (1929): ‘it’s not fair they don’t have to breathe!’ But it was this innovative nature of using sound in precise synchronisation that made Eisenstein embrace Disney, hailing Walt Disney’s Snow White and the Seven Dwarfs (1937) as ‘the single greatest film ever made’. [13]

5. Saccades are the jumps between fixations of the eye. This darting around occurs at a rate of about three per second, is involuntary and critical to vision because the brain edits out the moves and keeps updating the environment through saccades. Smooth pursuit is where eyes move in a continuous path without any pauses or jerks as when tracking a moving object.

Philosophers, Psychologists and Media theorists when discussing perception of reality or popular screen-based media are keen to distinguish the differences between conscious and unconscious perception, whether we give something covert or overt attention, or, to put it another way if our perceptions are active or passive. Chion makes the point that there are ‘no eyelids for the ears’, and goes on to extrapolate from this, that ‘sound more than image has the ability to saturate and short-cut our perception’, remarking that: The consequence for film is that sound, much more than the image, can become an insidious means of affecting and semantic manipulation. (p.34) [11] The audio visual contract that a participant submits to in the Diasynchronoscope is one where both sound and vision saturate and short-cut perceptions, as due to the lack of other stimuli and through overt demands made on eye direction, the attention of the percipient is highly controllable. Taken as a group, the Animation Principles offer one starting framework for investigating the emergent grammar of the Diasynchronoscope. One drawback is that they do not include a major trope of animation; that of synchronous sound. This is because the practitioners for whom they were originally written were unlikely to be involved in sound creation and worked to pre-constructed soundtracks, but it does seem to be a significant omission in terms of the modern animator.

3.3. The psychophysical nature of two principles

Principle eight ‘Arcs’ is a simple directive to animators to remember that all natural movement is in arcs. Arcs are crucial not only to create believable movement (nothing in nature moves in a straight line), but also to please a viewer’s eye. When the attention path of a viewer follows an arc it is usually in smooth pursuit and not being directed in saccadic jumps. We use arcs a lot in the Diasynchronoscope as keeping the eye in smooth pursuit is a great aid in making the animation read well. The nature of the arcs in the Diasynchronoscope tends to be graphically pure as some sequences of movement are concretely created as arcs with objects strung along ‘splines’ of curved wire. In 3D computer graphics, it would be unusual to view these arcs and they are only revealed if ‘ghosting’ of all previous frames is activated. The revealed arcs of motion hold an aesthetic beauty of their own which is one reason we often choose to reveal a static sculpture of diachronic pieces where all the motions in time are revealed holistically. It has been noted by cognitive neurologists that arcs are also a trope of magic as smooth pursuit commands attention. [14]

Principle ten, ‘Secondary Action’ is a very important one for the Diasynchronous technique. This describes any action that directly results from another action, such as billiard balls hitting each other or a scarf flapping behind a moving character. One way of communicating properties of a hero object is to have it affect another object. The artwork One, Two, Three... used this to great effect where each landing cube was accompanied by a ripple. Experiments with causal effect were investigated by Belgian psychologist Albert Michotte in the 1950s, who found such strong evidence for it amongst subjects in interpreting his experiments with colour blocks that he erroneously concluded that the attribution of causal effect was innate [15].

4 Emerging Diasyncronic Tropes and Principles

This paper has discussed certain implications for modern animation practice in relation to some discoveries made through animating with the Diasynchronoscope. Chief among these implications is to advocate some trans-disciplinary collaborations between animators and perceptual psychologists and to note how some traditional animation techniques adhere to redundant formalisms (such as the bounce). The paper further suggests that synchronous sound would be a useful addition to the twelve animation principles.

The Diasynchronoscope is still in its infancy and in the words of French philosopher, Gilles Deleuze:

\textit{The essence of a thing never appears in the outset, but in the middle, in the course of its development, when its strength is...}
assured.

Gilles Deleuze [17]

Because screen-less animation is a new technique, it is hoped that it will offer a deeper understanding of how kinetic perception works in the medium and beyond, ultimately confirming and extending some parameters for perceptual shortcuts in three-dimensional apparent motion based on global Gestalt properties and animation principles. The newness of the medium and the fact that the movement is non-biological and takes place without a screen means that the Diasynchronoscope offers a new mediated grammar that may be explored and a new set of aesthetic rules to accompany these rules.

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12. Sergei Eisenstein in a lecture at the Sorbonne
Abstract

To speak of metaphor is to make a bridge between understanding, reading and how we imagine and understand the world. Is to use a tool and make the transition between what goes beyond reality, beyond the empirical knowledge and achieve through word, image or any other form of language or expression present our thinking and reasoning.

If on the one hand we can characterize the literary metaphor (written or spoken), the expression of an idea through another word that can serve as a comparison, to characterize the visual metaphor we understand how the union and the umbilical cord between imagistic mechanisms of understanding a constant balance between living, experience our day-to-day, with our memories and the ways in organizing interpretations.

The presented work is theoretical-practical for the Master in Illustration and Animation and reflects the passage of literary metaphor through the visual metaphor of one of the illustration work of the author with the object of study, Greguerías of Ramón Gómez de la Serna, in a total of fifty illustrated selection that were presented in an exhibition with a published catalog.

The Greguerías are - by definition of the writer - the sum between the metaphor and humor.
1. Introduction

The pathway for research and bibliographical study of this work was developed primarily through analysis of the passage from literary metaphor to visual metaphor, in order to understand what interpretations are created by reading and making an image.

Looking at the referenced authors, the most analyzed and compared were Noël Carroll, George Lakoff, Mark Johnson and Virgil C. Aldrich, Jacques Rancière and starting with our subject the investigation is developed in the search for case-studies and examples of this passage from metaphor-humor Greguerías by Ramón Gómez de la Serna (1888 - 1963) to illustration, to drawing, to a new visual image.

The goal is to create a new selection of Greguerías illustrated that transform and also establishing new visual metaphors, to interplay word and image, but that ultimately become increasingly independent, that each illustration or set of illustrations result as an author illustration, inserted on an artistic panorama, away from the literal interpretation.

It is with this purpose that reaches the ultimate goal of this practical project, with the possibility that all illustrations pass as an artistic result, relating to the practice of the visual arts in both the process and the outcome.

The conclusive and practice of experimental laboratory resulted in fifty Greguerías illustrated gathered on display in the Galeria dos Leões, Edificio da Reitoria da Universidade do Porto, on July 19th 2013 to August 31st 2013, with the publication of a catalog (Self-publishing).

2. From literary metaphor to visual metaphor

“Of course, one cannot think without metaphors as saying a thing is or is like something-it-is-not is a mental operation as old as philosophy and poetry (1990:93)” Susan Sontag (p.6)

About the Literary metaphor, George Lakoff and Mark Johnson (1980) say that the metaphor itself is a tool that helps us think and understand, as it bridges the gap between reason and imagination.

The visual metaphor can be divided into three components:

- material, object and content.
- From literary metaphor to the passage to visual metaphor, the definitions of how it’s understood and apprehended vary and come from our conceptual system, the way we think and experience in day-to-day life. Only though this can we understand what what goes beyond literal value of either the literary or visual metaphor.
- Noël Carroll says that the visual metaphor is a subclass of visual images and exists only in instances where both homospatiality (elements common to one or more terms) and incompossibility (the occurrence of something that would be impossible in the subject’s empirical world) occur.
- However, it is according to our visual literacy that we build not only do we build a world of imagery and metaphorical relations, but also of abstract interpretations. The result of representation is always a consequence of interpretation.

3. CARROLL, Noël, Beyond Aesthetics: Philosophical Essays, (2001), Cambridge University Press, “a visual metaphor can be characterized in terms of three components: the material of the visual image, its subject matter, and its content. (...) shaped properties: its texture, color, line, mass, form, and the ways in which these are handled(...)it represents(...)the interaction of the material and the subject matter.” (p.361)

4. CARROLL, Noël, Beyond Aesthetics: Philosophical Essays, (2001), Cambridge University Press, “Arguably, we learn to recognize pictures of things in tandem with the development of our capacity to recognize the very things that are pictured. “, (p. 348) “If we are right in suggesting that our conceptual system is largely metaphorical, the the way we think, what we experience, and what we do every day is very much a matter of metaphor.” (p.114)

5. CARROLL, Noël, Beyond Aesthetics: Philosophical Essays, (2001), Cambridge University Press, “(...) we need to notice the discrete elements (...) that compose it. Moreover, the discrete elements that compose it coexist in the same space – the are homospatial – insofar as they are integral features of a single entity, parts of a unified whole that coexist within the unbroken contour, or perimeter, or boundary of a single unified entity”.

6. WELLS, Paul, (2009), Drawing for Animation, “Personal perception underpins how we observe, and is bound up with the particular knowledge and visual literacy each person has.”
"To think is to speculate with images." Giordano Bruno (1548-1600)

Noël Carroll (1980) concludes that visual metaphors don’t always need an image in order to become metaphors, “Visual metaphors can also be deployed in such a way that they call attention to non-visual, thematic properties of things.” (p.352). In the same way they induce abstract thought, the viewer can assimilate representations and be able to make them interact with other categories.

And so we go from visual metaphor to the interpretation made not only by the artist but also by the viewer. And from this interpretation there isn’t a codification or system of symbols and messages that interpret the metaphor, and as Davidson writes: “A metaphor does its work through intermediaries.” (p.364)

“Why does a certain sensation seek to gain the form of a drawing or painting, and another one the form of a sound, a word or a phrase?” (p.2)

From the visual metaphor we should understand the way it communicates to the viewer, how it interacts depending on the viewer’s interpretation.

To Paul Wells, interpretation though drawing is always based on the artist’s vision, experience, and will to represent the object either through a particular symbol’s form or some metaphorical purpose.

Thus the artist is the creator of visual metaphors and the first viewer, “which is to say, the man who enters the story which is capable of effecting the registration, storytelling, sharing.”

Could it be that through interpretation, personality, stroke and language the visual metaphor created by the artist and illustrator becomes a work independent of its origin? What is the role of illustration when creating a new visual metaphor? How does this process occur? When it goes beyond literary metaphor is he not isolating it, making independent and autonomous? At what point does it surpass the literary? Does it become independent?

“The indispensable character of this laboratory zone, which has always existed. There, in complete freedom, that is, without any constraints (...), a thought is constructed, at the same time visual and written, that rarely obeys the criteria of the dominant aesthetic.”

“The distinction between where metaphors appear first – in language or in pictures – seems a completely arbitrary way of classifying metaphors” (p.358), Noel Carrol.

8. CARROLL, Noël, Beyond Aesthetics: Philosophical Essays, (2001), Cambridge University Press,

"Viewers may find more connections between the elements in the image than the image-maker was aware of; just as verbal metaphors may contain an indefinite number of resonances that no reader, including the original author, ever fully comprehends.” (p.364)

9. BERARDO, Museu Coleção, (2008), Desenhos de Escritores, catálogo da exposição temporária, curador Jean-Jaques Lebel; Museu Coleção Berardo, Lisboa, (p.2)


3. Greguerías by Ramón Gómez de la Serna

Ramón has inventoried the world.  
Jorge Luis Borges, 1925

For me it is one of the greatest writers of our language.  
Pablo Neruda, 1973

How could I forget, and how to forgive and Latin American Spanish that obtuse indifference to his work?  
Octavio Paz, 1967

Ramón Gómez de la Serna, (Madrid, July 3, 1888 - Buenos Aires, January 12, 1963), Spanish modernist writer was the great enthusiast for the art and literature movements as the Spanish Surrealism - achieving a unique fusion of symbolist and modernist and avant-garde “(p.1)

About the Surrealism he wrote “This value gives the instinct and intuition in Surrealism, avoiding all longrando control and expression in pure automatism, without the intervention of reason without aesthetic or moral concern, produces a state of inspired lyricism than estereotipal beauty all that and is unable to produce that frenzy. “(1947:283)” (p.9)

Before emigrating to Argentina, he lived in Estoril in the, as he dubbed “El Ventanal” house. In Portugal he created a circle of relations related to the intellectual writers and, and mostly know as António Ferro and Almada Negreiros that accompanied much of his work, designing and illustrating for short stories published some of his novels published in Spanish newspapers, such as the magazine “La Gaceta Literaria.”

From 1910 to 1963 he wrote over 2000 what he called Greguerías, also illustrated some of them.

The writer’s own illustrations would be a worthy subject for evaluation and a dissertation project in its own right. However, here we can only say he is the creator, and that in two acts he does the passage from literary metaphor to visual metaphor.

Greguería definition by Ramón Gómez de la Serna: “The Greguería is the audacity to define what can not be defined, to capture the fleeting, to hit or not hit what you can not be in anyone or be at all.

The material and immaterial objects power of metaphor. All words and phrases cease in their correct and literal origin, and only reach their glory when they pass on to being metaphors, for it is the metaphors that make them abstract and embalmed. Metaphor multiplies the world, not caring about the rhetoric that forbids narrowing things down just because it is important to do so –

**Humor + metaphor = Greguería.**”

About humor Ramón wrote:

“Gravity and importance of humor (...) Define the humor in a few words, when is the most diverse antidote, when the return of all genres you his reason for living, is most difficult the world” (149) (...) It is proposed to correct the humor or teach, it has that hint of bitterness that thinks it’s all a bit pointless “(351) (...) what characterizes me is tenderness for things there in the back of me. Just as there are guard animals, I am the protector of things “(1936:74) (...) The greatest ambition is to find things that do not have easy sous-entendu” (1956:74)"
There are other examples in Spain, following César Fernández Arias target audience with a series of publications by David Vela, available for download. Through schools, parishes and other locations, Vela goes out to meet children (mostly 1st graders) and organizes workshops to illustrate Ramón Gómez de la Serna’s Greguerías.17

Diego Delgado and his academic work - a cover for the book Greguerías, can be seen at: http://www.behance.net/gallery/Greguerias-cover/5271099

For the final comparison, we look back to book published in 2009, by Chema Madoz that uses photography as a visual metaphor for the Greguerías.

Photography, illustration or drawing are merely media in visual arts to present the visual metaphor, a way to better represent the artist and author’s intentions which break the frontier and cross the literary metaphor barrier.
“(...) Image is, without a shadow of a doubt, the word’s solution.” (p.7)

The aim of this work was to be able to cross the borders of the word and write them through drawing. The objects of study of this project aren’t exactly each adopted strategy or representation in the interpretation of each illustration or example. We are looking to create a new selection of illustrated Greguerías that manage to create new visual metaphors and transform existing ones. This way we achieve an initial play between words and image, but over time they become more and more independent of each other. In the end we hope that this makes each illustration an artistic work, an author’s illustration that has value by itself in the artistic landscape, getting farther away from the literal interpretation of the literary metaphor. There it can go further, differentiating the Greguería from the illustration so that the latter can stand on its own merits.

The Greguerías were selected randomly in order to touch upon all the different subjects depicted in them as divided by de La Serna. The subjects are:

Love; Humanity; Infancy; Art and Literature; Black humor; Objects; Animals; Instantaneous; Poetry; Cities; Language; Politics; Fatalism; Death; Society; Philosophy and Nature.

From here the first sketches in the studies appear and we can understand how the passage from literary to visual is made, the author’s part as creator and first viewer and the viewer’s part when confronted with a visual metaphor.

4. 50 Greguerías illustrated by Constança Araújo Amador

The creative process as an artistic practice to the preparation of the present work was made over months between November 2012 and June 2013; and the result is presented in fifty Greguerías illustrated.

The set of drawings is divided in what can be called by three groups: the colour, the stain and the characters. They are somehow different, even if they take a continuous reading as a narrative, we can also detect their disagreements in the division in more personal characteristics of each work. It seems clear that the initial work is characterized by the purest and most saturated watercolour, developing increasingly more to a more transparent, largely simplified, using indian ink. The way we read this is contrary to present order of them in the catalogue or in the exhibition. The first were the last to be made and the first are those, which are in last place in the reading of the catalogue and the exhibition. The result is part of the process of research, reflection and internalisation of what and how we interpreted the Greguerías.

Then there are the characters that appear with the expressions of affection, nostalgia and introspection, within a certain timeless melancholy. The only exception is the “After using the toothpaste, we look at the teeth as beasts”, where the mood is certainly more evident as humoristic.

The remaining cases differ by the male figure presented as the same character throughout the work, cases like “That picture looked and seemed to speak. All that remained was coughing”, “Sideburns: Moss in the face”, and even “Terrible is when the soul begins to speak to the heart of darkness at the bottom of the chest”, and as consolidation with the female figure as in “It’s heartbreaking to see the operas that whines when the singing, the choir all the console.”

This female figure is presented as a self-portrait of the author, in different emotional manifestations that suggests how Greguería was related. Here the line is more evident in the work details such as hair or through the line that bordering the figure and delimiting a space, a time and capture a symbolic representation of an emotional time as in “We pleat I look down upon it because we want to seize with tweezers a great thought that us runs away”.

The face is sometimes omitted as in “Vegetarians only allow blood transfusions beet” and in “Only the poet must watch the moon”, but the features of the portrait and self-portrait remain, underlining once again the intention of author in making an eternal connection to poetry and to suggest the feelings as the Greguerías were interpreted.

The Greguerías with more stain or substantially more abstract, are the vehicle to look at the interaction between the author’s interpretation to the viewer/ spectator. “It’s like looking through a straw and we could sneak a peek the whole illustration” or “there
is a world beyond the representations presented here - humorous and sensitive - creating in us new worlds”, statements that was heard among spectators at the exhibition opening.
Through here is to understand one of the fundamental objectives and achievement of the Greguería illustrated - to create new visual metaphors from the final result (from the Literary Metaphor to the Visual Metaphor).

Centred in the sheet of watercolour paper, the Greguerías are presented as capturing the moment, the moment of interpretation by the author. This is the motto of the utmost importance in their implementation, because we know that the way we carry our visual language and how we interpreted, may change depending on many internal and external factors (such as experiences, moods, influences, etc.). And in the process of carrying out the present work is important to say that what was done yesterday will be different than if you will be today or tomorrow.

The Greguería is this; a world of endless ways to represent that does not end in itself. It is an opening and a allusion of reading interpretation made of the same Greguería a precise moment and time.

The process could be endless, with constant advances and setbacks in the development of visual Greguería, but instead of letting ourselves interfacing by the vagaries of life, we decided to take the moment, the present, and to assume how was the interpretation in that specific time.

It is with this intention that we reach the final goal of the practical project, the possibility that all the illustrations go through an artistic and authors result, being it related to the practice of fine arts, both in its process as in its outcome, which raises a critical dialogue between thought and accomplishment, between process and outcome. In this way, the 50 illustrated Greguerias, become in themselves a part of a series of works from an artist that come together in an exhibition and the publishing of a catalog.
5. Conclusion

As in artistic practice, having a way to communicate we tried to portray more truly the inner world and hence every interpretation is extreme and personal as more artistic than just illustration an Greguería.

This is the purpose of the illustrating for the author, making the presentation, the exhibition and the catalog is intended to be autonomous and once disassociated the Greguería, run like artwork as process group or series. The Greguería is the purpose of the medium, the route. This is the end, the work, the creation of the author’s interpretation.

We know that the result does not end in itself, we feel this way there is a constant desire to create, recreate and reinterpret the Greguerías. Create new solutions, displaying them, making other possibilities and, above all, to create, to combine research and reflection with artistic practice, a poetic symbiosis that can transpose and reflect an artistic work, as way of thinking and realization.

Hence other objectives are created. Such as the way of the viewer to watch it, it can also create new metaphors, whether literary, whether visual.

Above all, what is meant by these illustrations is to communicate, to express and try to show to the spectator a new way of “reading” the Greguería and a image; to let themself be absorbed by observations and give themselves a new meaning, a new interpretation, a new metaphor, the author’s metaphor.

Here are some statements from the spectators about the works on the exhibition:

“Simplicity, grace and delicacy. These are the great features found on display Greguerías. For some time, the spots, the colors, the textures of paper and thin ink strokes found no absolute harmony, revealing the small details, immense raptures the senses.” Michele Ferreira, August 2013

“I saw the exhibition and was impressed by the way it was presented by the Graphic and Conceptual refinement by simplicity formal pictures as a message, pure shorn of useless decorative elements concentrated in essence communicative.” Bernardo Massimo Scoditti, August 2013

“Wonderful experience, made possible thanks to a very deep sense of the transformation of the metaphor in verbal magic visual metaphor: a trip to a wonderful country the size of Alice in this case Constança Araújo Amador!” Cristina Aguiar, July 2013

“Your works are magnificent (...)! Lead us, perhaps, for the singular poetic metaphorical that only “saw” in Paul Klee!” Maria Augusta Araújo, July 2013

“Illustrations without “time””, Maria Irene Pereira Resende, July 2013

“I loved being there. The idea is great and was able to order as well, that the La Serna, would frill, with impressive rigor of his sayings. Congratulations!” José Ferreira, July 2013

Transcription from the text to the catalog:

Meta – forias from Constança Araújo Amador

“Who looked like that my paintings would meet them halfway, neither too close nor too far ... I do not know who said it or if it was so, I think it was Rembrandt for some ink blots, observed that faded too close up and lost direction, for example, consider a blurred Vermeeriano or a transparent and almost imperceptible income a dress ... But if this idea of Nebulae and projection serves us for painting , will certainly serve as a metaphor for art , poetry and life , whatever their color or appearance - one prerequisite: neither too explicit nor too vague and focused and impenetrable. (...)”

As I’m wandering aimlessly in these pictures I realize that each of them has its own identity, tells its own story, but at the same time, as a whole, setting several families coexist peacefully. (...) I also see faces, gestures and twats ... mountains, trees, skies and moonlight, sometimes tears and glass roofs, which in a more or less explicit in a more autonomous or anchored Greguería come off of him was at the origin (...) sometimes subtly associated with icons and references to other symbols surrealistic, if that such a combination is likely.
(...) In addition to the pertinent and always welcome memory [Mário] Botas and Cesariny, lead us to still unlikely musical compositions, to any season or mental state where we are hardly able to discern between what is owned by the our body and that which is outside.

But as he tells us himself Serna, the pencil writes only the shadows of words - to which we might add, the images and shadows of dreams - will each spend it here, desire, feeling, and interpret what is in the middle the path between themselves and the images...

[meta - idea of change , unity , transformation ]

[phoria - tendency to look away from its normal position ]”

Pedro Maia, June 2013

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Yvan Pommaux’s Fairy-Tale Whodunnits

Sandra Beckett.1

Abstract
Fairy tales seem to be a ubiquitous presence in contemporary culture. They have a remarkable capacity to adapt to virtually any art form, medium, or genre. In the past couple of decades, the fairy tale has become a popular source of inspiration for detective fiction and other books inspired by the mystery genre. These works range from picturebooks for very young readers to adult novels. In the 1990s, the French author-illustrator and comics artist Yvan Pommaux created a highly original hybrid genre which is appreciated across age categories. His series about the black cat detective John Chatterton cleverly blends fairy tale, detective novel, and film noir in picturebooks that also borrow extensively from the comic book. To date Pommaux has retold Little Red Riding Hood, Snow White, and Sleeping Beauty. This paper examines the various techniques used by Yvan Pommaux to transform fairy tales into contemporary detective stories that appeal to readers of all ages in John Chatterton détective (1993), Lilas (1995), and Le grand sommeil (The deep sleep, 1998) [1].

Keywords
Fairy tale, Retelling, Detective genre, Picturebook
1. Introduction

Fairy tales have pervaded almost every domain of contemporary culture. They are constantly being appropriated by other genres as well as by all the mass media of our technological age. In recent years, the fairy tale has become a popular source of inspiration for detective fiction and other books inspired by the mystery genre. These works address readers of all ages. Archie, the Big Good Wolf (1998), by Allan Baillie and Jonathan Bentley, is a picture-book for very young readers about a wolf detective who sets out, after his reputation has been ruined by the scribbler Mother Goose, to prove that the real baddy is the “wild hood” Red, who takes stolen goods in a basket to her “underworld ‘fence’” grandma. Gérard Moncomble’s third book about the detective Romain Gallo, Romain Gallo contre Charles Perrault (Roman Gallo versus Charles Perrault), which first appeared in the Bibliothèque Milan series for a broad audience, ranging from teens to young adults and beyond (it later appeared in Milan Poche Junior’s Polar series for readers from eleven to twelve years and up), pits the detective against Charles Perrault in six cases inspired by the Academician’s most famous fairy tales. Ed McBain’s Matthew Hope Novel series for adults includes the familiar titles Cinderella, Jack and the Beanstalk, Rumpelstiltskin, Goldilocks, and Puss in Boots. This paper is devoted to works by the French author-illustrator Yvan Pommaux, who, in the 1990s, offered a highly original blending of the fairy tale and the mystery genre in picturebooks that address a crossover audience of children and adults.

Pommaux’s inspiration came from a viewing of the 1944 film noir Laura by Otto Preminger. It prompted the author-illustrator to ask himself if “detective films and film noirs [are] fairy tales.” On his return from the movie theatre, Pommaux sketched a black cat in a raincoat, “a black, detective version of Puss in Boots” that was destined to become John Chatterton [2].

In the series, the titles of the hypotexts are never mentioned, although there are numerous direct and indirect allusions to the classic tales throughout the retellings. The titles of Pommaux’s reworkings are of little, if any, assistance in establishing a relationship with the original work. The title of the first book, John Chatterton détective (1993), gives star billing to the detective rather than the fairy-tale heroine’s modern counterpart. Although the eponymous title of the second book, Lilas (1995), refers to the protagonist, who is a contemporary Snow White, it still provides no clear indication of the hypotext. For readers familiar with the nature of the series, the title Le grand sommeil (1998), which focuses on an event rather than a character, offers a fairly obvious allusion to Sleeping Beauty. Readers who do not know the series is inspired by fairy tales will not be greatly assisted in making the intertextual connection by the cover illustration of Chatterton watching a modern girl wearing rollerblade pads fall onto a bed. The cover illustrations of the earlier books do, however, provide clues to help readers decode the hypotext. The red shoe Chatterton is eyeing on the cover of the first book may evoke vague reminiscences of Cinderella, but a flat buckle shoe is hardly the requisite footwear for that story, and the colour red is the distinctive trait of another fairy-tale heroine. The photo of the protagonist that John Chatterton holds on the cover and title page of Lilas, the same photo that the stepmother produces for the detective when she hires him to find the girl, is a direct allusion to the icon made famous by Walt Disney’s highly successful animated film. The photo is a leitmotiv that recurs throughout Lilas, as the detective uses it in his investigation. When the stepmother describes the missing girl for Chatterton, Pommaux deliberately inverts the Grimms’ description, beginning with her hair and ending with the colour of her skin. He substitutes a new metaphor which explains the name change: “Her hair is as black as ebony, her lips are as red as blood, her skin is as white as the lily. That is why she is called

2. From the Film Noir to the Fairy Tale

Both as an author and an illustrator, Yvan Pommaux had a longstanding interest in traditional fairy tales but his dilemma was that so many before him had already illustrated, better than he felt he could, the works of Charles Perrault and the Brothers Grimm. Pommaux acknowledges the weighty heritage of perhaps the most famous fairy-tale illustrator of all times when he asks what an illustrator can possibly do after Gustave Doré. In his view, the Grimms’ official version of the tales left very little scope other than pastiche, which can be clever and amusing, but always remains inferior to the original. After years of searching unsuccessfully for an original approach to the classic tales,
Lilas.” Chatterton repeats the description for Lilas’s boyfriend, who claims not to know the girl in the photo. When the detective asks Luc if the description of Lilas doesn’t mean anything to him, Pommaux seems to be simultaneously addressing the question to young readers who may not yet have guessed the heroine’s true identity.

3. A Hybrid World
Pommaux’s hybrid world, which puts animals and humans on an equal footing, cleverly replicates the world of fairy tales, in which a little girl converses with a wolf or a cat wearing boots makes his master’s fortune. The very effective anthropomorphic animals are the source of much of the charm and humour of Pommaux’s books, in which even the passers-by on the street receive the same attention to detail as the main characters. In front of Lilas’s house, a young girl between an ox and a dog wears a pink hat with little ears that seems to make her part animal. This amusing detail is echoed later by Luc’s motorcycle helmet, which has two pointed ears on top to accommodate real canine ears. As Chatterton rings his new client’s doorbell on the first page of Le grand sommeil, a man is engrossed in conversation with a well-dressed, pipe-smoking bull. Tailing the heroine, Chatterton drives past a colourful array of pedestrians that comingles humans and a dashing lion sporting a turtleneck and jacket, a dapper penguin in tails, a distinguished dog with spectacles in a brown suit, and a dazzling zebra in a yellow sports jacket whose design replicates his stripes. The heroines are all human, but the other characters may be either human or animal. Although the young prince charming who comes to Mademoiselle Rosépine’s rescue is human, Lilas’s beauty is a canine mechanic. The cat detective nonetheless addresses him as “young man,” suggesting that no distinction is made between animal and human characters. Members of the same family are not necessarily of the same genus. The father of the stunningly beautiful Lilas is a tiger. Mixed marriages take on new meaning in Pommaux’s books. Although Mademoiselle Rosépine’s mother is of the genus Homo, her father is a cigar-smoking bulldog. The animals often seem more human than the humans. It is Mademoiselle Rosépine’s tough-looking bulldog daddy who sheds tears as he tells Chatterton about his beloved daughter. However, several of the evil characters are animals, notably the cruel stepmother in Lilas. The attention to detail in Pommaux’s clever retellings is evident in the portrayal of Lilas’s callous stepmother as a yellowish cheetah with green eyes, who embodies the Grimms’ metaphorical description of the queen becoming “yellow and green with envy” [3]. At the end of the story, Lilas’s father replaces his malevolent cheetah wife with a human one whom he claims is “kinder.” The bad fairy in Le grand sommeil is a little old lady mouse whose endless knitting seems to allude to the notorious Madame Defarge and the other “tricotteuses” of the French Revolution. Referring to Lilas’s powerful businessman father and her humble mechanic boyfriend, Pommaux claims that Lilas is not “a treatise on class struggle, but the intention to colour the story socially is evident” [4]. However, class distinctions are not made along human/animal lines. The Rosépine’s have a canine butler, but the feline couple in Lilas have a human butler, although the stepmother gives her dirty work to Greg, a gorilla in a two-piece suit who certainly looks the part of a body guard and hit man.
4. Transposing the Fairy Tale to a 1950s Era

Pommaux’s subtle play of references to the cinema and the detective genre of the 1940s and 1950s appeals to adult readers, especially movie buffs, but it is done in such a way that the books remain perfectly accessible to young readers, who find their own set of references. The decor and costumes evoke roughly the same time period as the movie Laura. Pommaux’s important female characters wear haute couture, like Gene Tierney (who played Laura), Lauren Bacall, or Rita Hayworth. For some of the outfits, Pommaux uses special transfers to evoke “the textures of luxury fabrics, chiné, houndstooth, tweed, etc.” [5]. The illustrator mentions the example of the chic designer suit that Lilas’s stepmother is wearing when she consults her mirror. Vogue magazines, with 1950s-style cover girls, sit on the table next to the stepmother at the beginning of the story. This motif recurs in Lilas’s hiding place, where the cover of a woman’s magazine features a high-fashioned feline strikingly similar to the stepmother. In the familiar trademark trench coat, John Chatterton evokes “Dana Andrews, the brave cop in the raincoat” who saves Laura in Preminger’s film [6], while more generally offering a parodic version of the hard-boiled detective who came to the screens in the 1940s and 1950s. Even the typography dates the story, as the use of a plain courier font evokes newspaper type or police or detective reports typed on an old-fashioned typewriter. The collage of circa 1950’s labels, stickers, post cards, etc. that make up the endpapers of Lilas help to situate the series in the 1950s time-frame. The collage also subtle intratextual allusions to the first book, including a picture of Chatterton picking up a red handkerchief and a headline, apparently cut out of a newspaper, that reads:

A BLACK CAT DETECTIVE
A little girl, all dressed in red, has disappeared!

Pommaux talks about his transposition of classic fairy tales in an article written shortly after the publication of the last book in the Chatterton series. Dark forests become sombre city streets. Chateaux are replaced by private urban mansions designed by renowned architects. Instead of kings, there are powerful heads of companies. As the illustrator points out, Lilas’s father is not a king, but a tiger in a suit and hat who is obviously a powerful businessman. His house was probably designed by Robert Mallet-Stevens, says Pommaux, who points out that he owns a painting by Mondrian. Monsieur Rosépine wears a three-piece suit, smokes expensive cigars, and has an office in a mansion that has a large Pollock on the wall. The wolf wears a stylish double-breasted suit, drives a black sedan, and owns a large art collection. If the references to well-known art works are details that only adults will appreciate in Lilas and Le grand sommeil, Pommaux’s parodic play with art works is unlikely to go unnoticed by even very young readers of John Chatterton détective, in which Little Red Riding Hood is held hostage in the midst of the wolf’s impressive art collection [7].

5. The Influence of the Cinema

Pommaux adopts an oblong format that allows him to reproduce the screen effects of cinematography: close-up shots, long shots, and a variety of very unusual angle shots. He seems to be wielding a camera, rather than a brush or pencil. Textless full-page spreads and doublespreads provide a vast panorama much like the cinematographic images on a big screen. Sometimes the rhythm is accelerated by a series of textless pages presented sequentially like the images in a film. In John Chatterton détective, a series of textless, suspense-filled illustrations capture, as if in the frames of a film, the detective’s investigation as he follows a trail of red clues through a public garden and dark city streets to the missing girl, who has been abducted by a wolf. After the doublespread in which Chatterton finds the first clue, the pace is speeded up by the division of the next doublespread into four textless frames that suggest the haste with which the detective moves to collect the next four clues. Then the rhythm is slowed somewhat as he ponders the meaning of the clues. Another almost textless doublespread...
depicts the climactic moment when Chatterton discovers the final clue in the wolf’s black sedan and hears the cry emitting from the room where the little girl is being held hostage. A similar dark, suspenseful sequence is created in Lilas, when Luc Leprince is followed by Chatterton, who, in turn, is trailed by Greg, to the house where the protagonist is hiding from her stepmother. The dark, mysterious atmosphere of the film noir is recreated very successfully in these nocturnal scenes with their chiaroscuro play of light and shadows. Pommaux readily admits the strong influence of Alfred Hitchcock on his work. It is from Hitchcock that he inherited his belief that a successful bad guy is the key to a good story. Fairy tales certainly provide an extensive repertoire of outstanding villains. If some of the cinematographic elements in Pommaux’s books seem slightly contrived, that is because the illustrator deliberately makes “settings, lighting, and angles [...] slightly artificial” to evoke the era when films were shot in studios [8].

6. The Influence of the Comic Book

In his retellings, Pommaux transferred the essential elements of the tale from the text to the image. He insists on the fact that image is a form of narration in itself and absolutely indispensable in these books. Without the pictures, complete sections of the story become entirely incomprehensible [9]. Pommaux also creates comic books and this genre strongly influences his picturebooks, including the John Chatterton series. The reader is immediately struck by the varied layout of his picturebooks, which combine doublespreads, full-page illustrations, and a wide variety of sequential frames. The skill with which the layout is matched to the action is demonstrated in the scene portraying the growth of the hedge in Le grand sommeil. The verso is divided into three frames that depict the beginnings of the hedge, whereas the recto is a full-page illustration covered by an impenetrable mass of tangled thorns. In addition to the sequential layout, Pommaux also borrows speech and thought bubbles from the comic book. As the stepmother spitefully claws George’s face when he delivers the telegram informing her that her husband has found another woman, a thought bubble expresses the “Oups!” of the butler who had been unable to hide his hatred for his mistress. In a thought bubble, Chatterton encourages himself to make it out of the antique store without falling under the spell that is putting everyone around the heroine to sleep. Various symbols are borrowed from comics to show movement, smoke, music, pain, and so forth. Crosses on Chatterton’s eyes indicate comically that he is falling asleep over the sleeping girl’s profile, but as he fights the spell in the next frame, one eye remains a cross, while the other becomes a crescent moon.

Pommaux’s retelling of Little Red Riding Hood has very minimal text and it is composed entirely of dialogue in speech bubble format. However, the text becomes increasingly difficult in the three books, as if the author is addressing the same child readership as it ages. Or perhaps he has merely become more conscious of his loyal adult readership. Pommaux chooses one of the shortest and simplest fairy tales as the hypotext of his first story, moving to more complex tales in each of the other books. Lilas contains more text in smaller characters, but it is all still in the form of dialogue, with the exception of the comment “Meanwhile...” that transplants readers to a scene taking place simultaneously elsewhere. Le grand sommeil begins with third-person narration, although the rest of the text is still comics-style speech and thought bubbles. Sometimes the only text on a page consists of the characteristic onomatopoeic vocabulary of comics. When Greg follows Chatterton to Lilas’s hiding place, two full-page il-
Illustrations are accompanied only by three onomatopoeic sounds: “Crac!!” as the gorilla breaks down the door, “Ouch!!” as Chatterton gets thrown against the wall, and “Bam!” as Luc is pushed out of the way and a shelf full of books collapses on his head. Lilas faints as the gorilla lunges toward her with a knife, so no sound issues from that corner of the page.

The full-page illustration in which Mademoiselle Rosépine pricks her finger on the spindle in the antique store is accompanied only by a very large “OH!” A subsequent doublespread contains a humorous series of “ZZZZZZ”s emitting from all the sleeping animals and humans in the surrounding neighbourhood, beginning with the bad fairy/mouse who is not immune to the spell. A single “Z” issues from Chatterton as he staggers out of the store, but soon his “ZZZZZZZ”s are prolonged and he, too, is fast asleep, prompting a couple more onomatopoeic sounds, as his roadster crashes into a pole and a headlight shatters. Pommaux’s clever allusions to other genres include a very subtle allusion to a famous comic book series. The irate pedestrian with the melon hat and umbrella who gesticulates wildly at Chatterton’s speeding roadster is the spitting image of Dupont and Dupond, the identical, but unrelated, narrow-minded police officers in Hergé’s Tintin. In his haste to reach Mademoiselle Rosépine’s prince charming in the café, perhaps Chatterton has accidentally run down Dupont/d’s twin!

7. Fairy-Tale Parodies

Pommaux’s retellings include many subtle allusions to the hypotexts, some of which will be decoded only by adults. The bouquet of white lilies that sits prominently on the table on the first page of Lilas reappears obsessively in other scenes portraying the stepmother obviously represents the absent heroine whose name means lily. Is the bouquet an ironic touch on the part of the illustrator or does the stepmother deliberately decorate her home with a constant reminder of her beautiful rival in order to whet her appetite for revenge? The life-size white dove perched on the carnivorous stepmother’s chic hat also evokes the innocent girl who is to be sacrificed to the stepmother’s vanity. The new stepmother at the end of the story wears clusters of snowflakes on her hat, a direct allusion to the fairy-tale heroine who is “as white as snow” [10]. They seem to suggest that this stepmother will resemble more closely Lilas’s natural mother. The motif of the mirror is introduced on the first page of Lilas, but it undergoes a slight make-over, since the stepmother contemplates her image in the mirror of her compact. The use of a compact mirror is very much in keeping with the haute couture theme that Pommaux develops throughout the series. Several traditional motifs are maintained or subtly subverted, often in a very humorous manner. The stepmother gives Greg a small casket in which he is to bring back Lilas’s heart, rather than her lungs and liver as in the Grimms’ version. The gorilla is unable to stab Lilas, who willingly gives him her heart, that is, the gold heart she wears around her neck, which he is to sell to buy a plane ticket in order to avoid the stepmother’s wrath.

Pommaux parodies various conventions of the fairy-tale genre. In Le grand sommeil, Mother Goose is replaced by a marabout dressed in the garb of a traditional African storyteller and who seems to appropriate the Western tale of Sleeping Beauty. The marabout/storyteller tells Chatterton the legend of the beautiful sleeping girl that began circulating while the detective himself was sleeping. In this less grim version of the tale, the many young men who try unsuccessfully to get through the hedge and get stuck do not “die miserable deaths” [11] but merely leave behind their tattered clothing. Pommaux seems to poke fun at the anonymity of fairy-tale protagonists. The heroine of John Chatterton détective is deprived even of the nickname of her traditional counterpart. On the other hand, his modern Snow White is given a Christian name, Lilas. The heroine of the third book is known only by the more formal Mademoiselle Rosépine. Her family name, derived from the French words for “rose” and “thorn,” is a direct
allusion to the Grimms’ version, in which the eponymous heroine is called Brier Rose. Fairy-tale stereotypes are also spoofed. When Lilas’s father returns with a new stepmother at the end of the story, Chatterton is obviously thinking about the fairy-tale reputation of stepmothers, as he says pensively to himself: “Hem! Another stepmother...” Pommaux pokes fun at fairy-tale happy endings in Lilas. A kind of epilogue, in which Chatterton sits drinking coffee in his office six months later, informs readers that the detective sometimes has a drink with Georges in the Atomic Bar and catches up on the news: “Madame is charming, Monsieur doesn’t travel any more, Luc and Lilas are happy...” The epilogue is cleverly superposed on the blissful reunion at the end of the investigation, thus confirming that the happiness promised in that final scene actually becomes a “reality.” Pommaux also spoofs the conception of time in fairy tales. Le grand sommeil begins by situating the timeless tale of Sleeping Beauty “a Wednesday in the month of April” at “nine o’clock in the morning.” Toward the end of the tale, Chatterton awakes with the feeling that he has slept for a century. The marabout/storyteller replies that he has slept “a long time,” but his qualification diminishes the length of time to “days and days.” Tongue in cheek, Pommaux suggests that those days were sufficient for the “legend” of a sleeping beauty to propagate.

Many comical details poke fun at the classical tales. The family name of Lilas’s mechanic boyfriend is Leprince and his place of work is prominently named “Garage Leprince.” Only an attentive reader will notice that the café where Mademoiselle Rosépine and her admirer go to sit in disconsolate silence at adjoining tables every Wednesday is appropriately named the “Café Grimm.” As Chatterton rushes to the café to fetch the boy destined to awaken the heroine, he worries about the success of his mission because the unlikely, pining prince charming looks quite asleep himself. Pommaux has fun with the spinning wheel motif in Le grand sommeil, humorously underscoring the anachronism of the object that plays an essential role in the classic tale. When Mademoiselle Rosépine’s father tells Chatterton — known as “the famous detective” now that he has reached his third case — about a bad fairy’s prediction that his fifteen-year-old daughter will fall into the “Deep Sleep” at that age, by pricking her finger on the spindle of a spinning wheel, he has an encyclopedia at hand on his desk to enlighten the detective about the antique artifact and how it works. Admitting that he doesn’t see how or where she could find one of these “antique machines,” the father nonetheless engages Chatterton to follow her and keep her away from anything that looks even vaguely like a spinning wheel. The famous detective is surprisingly unaware of the danger when the girl enters an antique store. The store bears the pertinent name “Autrefois” (In Bygone Days), which evokes the days of “once upon a time.” Ironically, he waits patiently under a sign advertising an antique spinning wheel for sale. Readers view the sign from several perspectives, from a distance as it appears to Chatterton from his car (the heroine is obviously reading it), then much closer as Chatterton stands waiting in front of the shop (the reader can now make out the words and see the picture), and then very clear close up, as it appears behind Chatterton’s head as he whistles nonchalantly, still oblivious to the imminent danger. The last frame places the reader inside the shop looking out the window at a dismayed Chatterton who is finally reading the sign. Important motifs in the classic tale sometimes become insignificant details in the retellings. An apple and a comb, reminiscent of the poisonous apple and comb Snow White took from the disguised queen at the dwarfs’ house, sit on a table in the house where Lilas is hiding from her stepmother. The apple reappears in a couple of other illustrations in close proximity to Greg’s knife, as if the illustrator wishes to attenuate the weapon’s threat by assimilating it with an innocuous paring knife. On the last page of Lilas, Chatterton points to a rather kitschy statuette of a dwarf sitting on his desk and tells readers that Lilas’s father, who has six more almost identical to this one, gave it to him as a sign of his gratitude. The “faraway land” from which it supposedly comes...
can only be the neighbouring country of Germany, the Grimms' homeland. The final sentence makes a more direct reference to Snow White, as the detective explains that the statuettes represent characters involved in “an old and famous criminal story which, in some respects, resembles that of Lilas.”

Sitting conspicuously on Chatterton’s desk throughout the series is a book titled Affaires criminelles célèbres (Famous Criminal Cases), which is a highly significant leitmotiv. When the reader first meets the detective at the beginning of John Chatterton détective, attention is focused on the green-covered book that is turned conspicuously toward the viewer. On the last page of Lilas, the book, now with a red cover, sits on Chatterton’s desk next to the statuette of the dwarf, where it once again faces the viewer. Toward the end of Le grand sommeil, the detective is portrayed consulting the book that usually sits closed on his desk. This detective’s criminal code is the fairy-tale canon. It seems that his book of famous criminal cases even contains the different versions of the infamous crimes of the past, as the detective recalls not only the “murky story” in which the little girl and her grandmother are eaten by a wolf, but also an alternative ending in which a hunter rescues them. In this rendition that, in contrast to Perrault’s version, offers a happy ending, Chatterton is given the huntsman’s role, knocking the wolf out with a brick and cutting the little girl free with a Swiss army knife. Although the only allusion to the venerated volume in Lilas occurs on the final page, it is obvious that the detective has consulted it earlier because he refers to “an old and famous criminal story” that resembles that of Lilas. Despite his doubts that Mademoiselle Rosépine could possibly prick her finger on a spindle, Chatterton is determined to be vigilant because “this spindle, this young girl threatened by a long, deep sleep,” all remind him “vaguely of an affair that was famous in its time....” Later the detective actually studies the book and learns that there are not “thirty-six solutions” to the heroine’s problem: she can only be awakened by the kiss of “her heart’s desire.”

8 . Conclusion
Chatterton’s livre fétiche constitutes a kind of mise en abyme of Pommaux’s John Chatteron series, which is based on the “famous criminal cases” of Perrault and the Grimm brothers. The obsessive presence of Affaires criminelles célèbres, with its intertextual and intratextual implications, is a constant reminder of the author-illustrator’s intent to blend the fairy tale and the detective genre in a series of fairy-tale whodunnits. Inspired by crime thrillers and the film noir, Pommaux revisits these classic tales in a unique hybrid genre that also borrows extensively from the comic book. In Pommaux’s multilayered John Chatterton books, the endearing black cat detective who solves the cases of Little Red Riding Hood, Snow White, and Sleeping Beauty, captures the imagination of readers of all ages.

Acknowledgements
I would like to thank Yvan Pommaux for his generous permission to reproduce illustrations from his books.

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Da entrada em “casas muito doces”
reescritas verbais e visuais de Hansel e Gretel

Sara Reis da Silva

Abstract
Seguindo pressupostos metodológicos assentes na hermenêutica textual e convocando estratégias de leitura e análise que contemplam não apenas o discurso verbal, mas também o texto ilustrativo, este ensaio centra-se num conjunto de obras de autoria plural nas quais se reescreve linguística e visualmente o conto Hansel e Gretel, editado, pela primeira vez, em 1812, em Kinder- und Hausmarchen, de J. e W. Grimm. A partir deste estudo de feição comparativista, problematizam-se questões relativas à recepção literária e, em particular, à literatura/edição preferencialmente vocacionada para a infância, procurando-se aduzir ao campo investigativo em causa matéria crítica e potencialmente questionadora.

Keywords
Literatura para a infância, J. e W. Grimm, «Hansel e Gretel», ilustração
Introdução

A investigação tem provado que «o leitor se forma segundo as suas leituras» (Mendoza Fillola, 2001: 234) e que o contacto precoce e plural com textos de origens e de modos/géneros distantes, favorecendo uma competência lecto-literária, sedimenta e mobila a memória literária ou um referente literário colectivo, coincidente, em última instância, com um universo perene. É este, pois, ocupado por obras que formam uma cultura profunda, integradora de valores humanos, por objectos socialmente reconhecidos, apelidados de “clássicos”, por exemplo, por Italo Calvino (2009) ou Ana Maria Machado (2002).

Assim se justifica que muitos dos mais de duzentos contos coligidos e editados pelos irmãos Grimm no século XIX constem, ainda hoje, de listas que ambicionam a fixação de um canon literário ou sugestões de leituras imprescindíveis “antes de se crescer”, como atesta o volume 1001 Children’s Books You Must Read Before You Grow Up (2009).

Conto que integra a obra Kinder-und Hausmarchen (Contos de Grimm/Contos Populares da Alemanha/ Contos à Lareira / Contos para o Lar e as Crianças / Contos da Infância e do Lar, 1812-1822), volume clássico dos folcloristas alemães Jacob and Wilhelm Grimm, publicado, pela primeira vez, em 1812, Hansel & Gretel é um dos exemplos incontornáveis – a par de O Capuchinho Vermelho, por exemplo, mas este numa escala muito superior – da pervivência/influência da literatura de origem tradicional oral na literatura preferencialmente dirigida ao leitor infanto-juvenil, em particular, e na cultura, em geral. Veja-se, por exemplo, Hansel und Gretel, ópera infantil de Englebert Humperdinck, datada de 1893, ou, num registo já recente, o filme homónimo de directed Tommy Wirkola, que estreou nos cinemas portugueses em Fevereiro de 2013.

Os percursos de leitura que, de seguida, partilharemos procuram dar conta da multiplicidade de formas editoriais e, em especial, textuais (verbais e ilustrativas) decorrentes deste texto matricial, uma produção literária que, a par de outras do mesmo género, comprova a perspectiva de Sandra L. Beckett: «In recent decades, there has been a marked increase in the number and variety of retellings, particularly in the field of children’s literature.» (Beckett, 2002: xvi).

Hansel e Gretel em Portugal

Em Portugal, a alargada recepção da colecção grimmiana teve início, segundo atesta pormenorizadamente e rigorosamente Teresa Cortez (2001), nas versões publicadas, em 1837, na revista lisbonense Biblioteca Familiar e Recreativa. Oferecida à mocidade portuguesa. A estas juntaram-se, anos mais tarde, várias publicações em livro e outras em periódicos, como, e apenas para citar alguns exemplos: a selecção de contos assinada por Maria Amália Vaz de Carvalho e Gonçalves Crespo para a obra Contos para os nossos ilhos (1882); o volume editado, em 1883, por Salomão Saragga; a publicação Alguns contos de Grimm (1904), 11º volume da colecção «Para as Crianças», organizada por Ana de Castro Osório; as traduções de Henrique Marques Júnior para a colecção «Biblioteca das Crianças» (1898-1910) – refere-se que “Hansel & Gretel”, com o título «Os dois irmãos», integra o volume «Contos de Natal» (1908) desta última série.

Sumariamente, o enredo deste célebre conto (aliás, bastante conhecido) – que pode ser lido «as a rationalization of the abusive treatment of defenseless children who forgive their father (not their mother) for his abandonment of them» (Zipes, 2001: 184), como preconiza J. Zipes – é protagonizado por Hansel e Gretel, dois irmãos que, dadas as dificuldades de sobrevivência da família, são abandonados pelo pai e pela madrasta numa grande
floresta. A cooperação dos dois irmãos e, muito especialmente, a inteligência de Hansel, testemunhada não só no sucesso do regresso à casa, aquando do primeiro abandono – Hansel “marca” o caminho com várias pedrinhas que, brilhando de noite, «como moedas de prata», lhe mostram o percurso de regresso –, mas também sempre que a bruxa má, durante o seu cativeiro, lhe pedia que metesse o seu dedo nas grades para ver se estava «gordinho» e ele astutamente colocava um pequeno osso, estratégia que acabou por facilitar, de certa maneira, a salvação de ambas as crianças, determinam o desfecho positivo desta narrativa.

Pontuada pela presença de duas vilãs – a madrasta e a bruxa má –, que acabam ambas castigadas, a história é, na verdade, um elogio à infância, bem como a expressão literária da capacidade de descoberta, de aprendizagem e de encontro consigo próprio inerentes à própria criança. E se o desenlace eufórico, após um percurso tão injusto, duro e cheio de provações, permanece na memória do leitor, é a descoberta na floresta de uma casa feita de «pão», com um «telhado formado por camadas de bolos» e janelas «todas feitas de puro açúcar» que funciona como elemento distintivo fundamental desta narrativa e contribui para o seu inegável carácter apelativo. Na verdade, este é um conto tocante, perpassado por temáticas intemporais e tão “desconfortáveis” ou “intrigantes” como, por um lado, a pobreza extrema, a fome, o abandono infantil, a crueldade adulta – personificada na madrasta e, também, no pai das duas crianças que acaba por anuir à vontade da companheira –, a mentira, a decepção, o desprendimento afectivo, a traição ou o medo e, por outro lado, a coragem, a capacidade imaginativa infantil, a união, a fraternidade, a esperança, a vitória do bem sobre o mal ou a justiça retributiva.

As décadas de 80 e de 90 do século XX foram particularmente férteis no domínio da edição portuguesa de textos adaptados da tradição. Ainda que nem sempre se possa assinalar, nestes volumes, uma significativa qualidade verbo-icónica, importa talvez sublinhar que muitos deles vêm a lume em formatos consentâneos com as exigências de um público de leitores muito pequenos que desejam manusear livremente o objecto-livro, facto que reflecte, em última instância, o aparecimento de um interesse e uma preocupação com a promoção de leitura em idades precoces. Acresce, ainda, o facto de a proliferação indiscutível de edições que têm como matriz o conto em questão, surgindo no mercado livreiro português com títulos tão variados como «João e Maria», «Joãozinho e Joana», «João e Ana», «João e Margarida», «Os dois irmãos» e, obviamente, «Hansel e Gretel» e «A Casinha de Chocolate», entre outros, atestar a popularidade desta célebre narrativa que, em boa verdade, parece reunir alguns dos ingredientes para agradar aos leitores mais pequenos (por exemplo, a infância como protagonista, o medo, a aventura e o perigo, a superação/punição do mal e a vitória do bem, etc., etc.).

Incluem-se neste universo um número elevado de obras, com uma diversificação considerável, publicadas por editoras como a Majora, a Edinter, a Porto Editora ou a Campo das Letras, entre outras, e cuja análise não pudemos contemplar neste breve ensaio. Ainda assim, importa deixar registado que comuns a todos os volumes relíduos neste apartado são, em termos sucintos, o design ou o graismo intencional, aparentemente vocacionado para pequenos leitores, a extensão reduzida do relato (com a omissão de perípecias, por exemplo) e, ainda, o desenlace “tranquilizador” (em alguns casos, até, com a elisão da referência à morte da bruxa).

Hansel e Gretel reilustrado em forma(to) de conto ou de álbum narrativo: alguns exemplos

Um dos textos seleccionados trata-se de «A Casinha de Chocolate» (2007), conto da autoria de Alice Vieira, ilustrado por Carla Nazareth.

Telvez a mais significativa singularidade do aspecto desta narrativa breve, integrada no volume A que sabe esta história?, seja o facto de surgir acompanhada da receita «Tarte de chocolate com variedade de fruta e hortelã». Além disso, sublinha-se, à partida, que esta se desvia, em vários sentidos, do conto escrito pelos irmãos Grimm. Um dos principais aspectos divergentes constata-se logo na abertura do relato – «Joãozinho e Maria ainda não tinham percebido como tudo aconteceria. Lembra-se apenas de terem saído de casa muito cedo e, de repente, olhando em volta, terem descoberto que estavam sozinhos na floresta» (Vieira, 2007: 16).

A estes aspectos junta-se a nota humorística de que se reveste o facto do próprio modelo da figura da bruxa ocorrer subvertido, a partir da paródia e da referência à passagem do tempo e às inver-
táveis mudanças que este impõe:

«Chamou a bruxa e disse-lhe:
– Para que queres tu comer-nos – a nós, que somos pele e osso -, se podes comer coisas tão boas que a tua casa te dá?
– (...) Mas a mim sempre me ensinaram que as bruxas se alimentam da carne de meninos que se portam mal, e não estudam, nem trabalham, nem...
– Pára! – gritou Maria. – Deves ser uma bruxa muito velha! Dantes é que se contavam essas histórias de meter medo, mas hoje já ninguém acredita nelas! (...)» (idem, ibidem: 17).

O cómico de situação distingue, igualmente, o desenlace positivo deste conto de Alice Vieira:

«E nessa tarde, quando finalmente as pessoas da aldeia os encontraram, estavam os três muito divertidos, sentados ao lado de uma estranha casa sem telhado e já só com uma parede, a levar à boca grandes colheradas de musse de chocolate, acompanhadas de bolachas de baunilha, enquanto Maria dizia:
– E com o resto daquela parede ainda te vou ensinar a fazer uma tarte de chocolate de comer e chorar por mais. Mas só para os dias de festa! Quanto à bruxa, pelo meio da mousse de chocolate, murmurava apenas:
– Meu Deus, o que eu perdi nestes anos todos...!» (idem, ibidem: 17).

O discurso pictórico que acompanha esta narrativa, sendo dominado pelos tons castanhos, cinge-se: a dois pormenores visuais, colocados, um (um bombom) junto ao título e outro (um pássaro pousado num ramo de uma árvore) ao lado dos segmentos conclusivos da narrativa; e a uma ilustração que ocupa uma página inteira e na qual se pode observar a presença de três figuras humanas com aspecto amedrontado.

O volume Hansel e Gretel (2008), que veio a lume com a chancela da Ambar, integra uma série de obras clássicas revisitadas visualmente pela premiada Lisbeth Zwerger. Proporcionando um (re)encontro singular com o texto clássico em questão, o caráter inovador deste exemplar reside, no essencial, na sua especial componente ilustrativa, visto que discurso verbal segue muito fielmente o texto grimmiano. O admirável discurso pictórico de Lisbeth Zwerger, numa linha estética muito semelhante à que se observa, por exemplo, em A Lenda da Pétala de Rosa, de Clemens Brentano (Edinter, 1992), materializa visualmente as angústias dos dois meninos-heróis, acentuando o sombrio do enredo e a crueldade das personagens oponentes. Extensas (a ocuparem integralmente uma página inteira ou páginas duplas), compostas a traço delicado e sóbrio e dominadas pelos tons pastel, em castanhos, cinzentos e bege, as ilustrações centram-se na expressão do universo emotivo/afectivo que distingue o conto, colocando em contraste a inocência e a união infantis ou, ainda, a sua desproteção e, por exemplo, a dureza e o carácter dissimulado da bruxa má. A série de ilustrações que integram este volume reproduzem também progressivamente/sequencialmente a totalidade dos momentos da diegese, possibilitando, na verdade, e por si só, uma reconstrução/reconstituição da narrativa pelo leitor. As sugestões de movimento e de dinamismo, as formas longilíneas e a leveza e o pormenor do traço, aspectos que diferenciam a linguagem ilustrativa da austríaca Lisbeth Zwerger, dominam a componente visual do volume em análise. Estas estratégias servem eficazmente uma representação narrativa assente numa imagética marcada por uma expressão “clássica” e por uma simplicidade, que se centraliza no registo do essencial e do preciso (Modesto, 2000). Em suma, as estratégias figurativas da ilustradora, «particularly effective in the interpretation of folktales» (Salisbury, 2004: 18), parecem reiterar simultaneamente a tradição e/ou a ideia de passado longínquo e a atemporalidade, a par das implicações simbólicas, das temáticas ficcionalizadas.

Assinale-se também a edição no mesmo ano pela editora galega Kalandraka de A Casinha de Chocolate (2008). Trata-se de um volume singularmente ilustrado por Pablo Auladell, que, na mesma linha cromática do de Lisbeth Zwerger e com especial sensibilidade, recria, como destaca Ana Margarida Ramos, «a dimensão profunda do texto, valorizando o percurso iniciático – libertador e conquistador – realizado pelos dois irmãos, assim como [d]os laços profundos que os unem.» (http://www.casadaleitura.org/). Na verdade, se a vertente linguística segue com relativa rigor a matriz clássica, já a componente visual evidencia uma especial originalidade. Os tons esbatidos e sombrios, nos quais se destacam o castanho, o bege, cinza e sépia, por exemplo, e os traços leves e subtis dão corpo a uma linguagem pictórica que
sugere, muito mais do que explicita, e que estimula a imaginação do leitor. Destaque-se, ainda: a opção generalizada pela página dupla e, em especial, pelo seu uso apenas com ilustração, sem texto linguístico, no ponto culminante da narrativa (a descoberta da casa da bruxa); a contenção na representação de detalhes do cenário; e a inclusão de figuras (de aparência circense) que não se encontram referidas no conto.

**Hansel e Gretel (ainda) não editado em Portugal**

Nesta secção, incluímos uma referência a algumas obras estrangeiras (não editadas com chancelas nacionais) que, pela sua especial aparência, merecem integrar esta abordagem.

O volume da autoria de Anthony Browne, ilustrador considerado por muitos como um «autor pós-moderno» (Modesto, 2001: 5) é datado de 1981. Reproduzindo o texto matricial, a narrativa é recriada visualmente a partir de estratégias de enfatização dos estados de espírito dos protagonistas, em particular, da profunda tristeza, consubstanciando-se, assim, mais uma vez, o estilo do ilustrador em questão. Elementos como uma reprodução a preto e branco do quadro A Luz do Mundo, de Holman Hunt, colocado na parede da sala, na primeira cena visual, bem como a presença simbólica de um pássaro aprisionado (aliás, existem várias aves ao longo da obra) reclamam do leitor uma considerável competência literária/intertextual. A figura feminina que mais surpreende talvez seja a madrasta, que, nesta obra, surge muito maquilhada, com um casaco de pele de leopardo e um penteado dos anos 50, uma representação que, nada isenta do ponto de vista crítico, contrasta com o estado de penúria em que vive a família dos dois irmãos. Nesta obra, reconhecemos, uma vez mais, que o imaginário de Anthony Browne «ultrapassa mesmo as fronteiras entre criança e adulto, e que a sua leitura se prolonga numa relação directa com o nível cognitivo, cultural, de percepção e sensibilidade artística do leitor» (idem, ibidem: 4), impondo-se como um «espaço de grande semântica» (idem, ibidem: 5).

Hansel & Gretel, com ilustrações da alemã Susanne Janssen (2007), é um livro com capa dura e uma qualidade assinalável, impondo-se, portanto, pela sua especial configuração gráfica e pela sua considerável dimensão. Este trabalho, uma sofisticada composição em técnica mista, com fotografia, pintura, recorte, e colagem, valeu à artista a atribuição do prestigiado Prémio Ilustrarte 2007 e o Prémio Alemão de Literatura para a Infância 2008, na categoria de álbuns ilustrados. Se a capa introduz a dualidade e a proximidade das protagonistas do conto, nas guardas da publicação opta-se por avançar com uma nota espacial. Nestas, surge visualmente recriada uma casa e algumas peças de vestuário, representação visual que pode ser lida como sugestão da importância de que, no conto, se revele o espaço físico, a deslocação e o (des)conhecimento deste. As formas fortes e distorcidas, por vezes, a tocarem o grotesco e o caricatural, que marcam as ilustrações, ora ocupando uma página, ora expandidas por páginas duplas, abrem caminho a uma reinterpretação deste texto clássico, renovando simultaneamente a tensão, a inquietação, a frieza, a inocência, a esperança e a coragem que o distinguem, além de possibilitem um regresso a objectos artísticos do passado, como, com rigor e perspicácia, explicita Anna Castagnoli (2007).

O volume ilustrado por Kveta Pacovska (2008), em capa dura e com um grafismo que provoca um impacto visual ir-recusável, coloca especial ênfase na figura da bruxa (capa) e dos dois protagonistas (contracapa). O «vermelho vivo, luminoso, radioso» e as formas «simples, toscamente geométricas», traços recorrentes na arte aplicados aos livros de Kveta Pacovska (Godinho e Filipe, 2001: 4), serve a encenação visual de uma narrativa clássica que, assim, ganha uma notável configuração vanguardista. Às cores intensas juntam-se, nesta publicação, o recurso à colagem de pequenos pedaços de papel prateado, estratégia que parece mimetizar um estimulante jogo de espelhos e de reflexos, indicador de um caminho de leitura possível, motivador de auto e hetero-identificação com a narrativa recriada, um percurso de leitura no qual o leitor é estimulado a integrar-se na ilustração, reflectindo a sua própria imagem nos segmentos espelhados. Em certas ilustrações, observa-se a recuperação de breves segmentos textuais já anteriormente apresentados pelo texto verbal, aspecto que favorece a retenção na memória de sequências narrativas determinantes do conto em questão, podendo, ainda, ser interpretadas – pelo local na página onde são colocadas – como legendas das ilustrações. Uma referência necessária, ainda, às guardas iniciais e finais do volume que, tal como a capa e a contracapa do volume, possuem uma configuração visual dissemelhante, integrando, no
caso das primeiras, uma representação extensa, em página dupla e em fundo vermelho e branco, da bruxa e, no caso das últimas, duas ilustrações distintas que parecem privilegiar quer a figura paterna, quer os protagonistas. Em suma, consideramos que esta obra, como outras ilustradas por Kveta Pacovska, confirma a atração que o seu trabalho artístico suscita, um trabalho gráfico que «begun to be appreciated by a wider audience beyond her home country of Czech Republic. Her ebullient color and uplifting subject matter appeal to all ages.» (Salisbury, 2004: 17).

O discurso ilustrativo do italiano Lorenzo Mattotti (2010) para Hansel e Gretel distingue-se substancialmente dos anteriores pelo privilégio concedido à cor negra e pela prevalência do escuro. O recurso à tinta da china e a uma intersecção de traços e/ou de linhas, cuja força sugestiva convida a uma observação sem pressas, demarcam este volume dos restantes aqui relidos. O registo contrastivo, do qual sobressai uma especial pureza e uma evidente economia cromática, materializa com eficácia a densidade e o dramatismo que caracterizam a narrativa em questão.

**Reflexões finais**

Para finalizar algumas notas, ainda, para, em primeiro lugar, lembrar que Hansel & Gretel, juntamente, por exemplo, com A Branca de Neve e os Sete Anões, foi um dos contos que acabaram por sofrer uma significativa alteração, motivada pela recepção negativa por parte da crítica, aquando da sua primeira edição. A “acusação” de que o comportamento materno nestes contos referidos era perfeitamente impróprio para um texto a ser lido por crianças ditou a substituição de uma má mãe por uma madrasta cruel. Efectivamente, nos últimos anos, perpetuou-se este processo de apagamento em edições diversas. A título de exemplo, o ponto de vista crítico de Ana Maria Machado: «Em alguns casos a intromissão não se limita a apenas cair no ridículo, mas chega a extremos perturbadores, como numa versão que passa por um abandono de João e Maria na floresta (assim pouparam os pais do papel active e terrível que desempenhavam na versão tradicional) e, com isso, faz com que as crianças se percam por serem desobedientes e passem a ser as únicas culpadas de todos os males que lhes acontecem. Como se isso não bastasse, em seguida essa adaptação ainda vai mais longe e evita que as crianças empurrem a bruxa no fogo, impedindo o efeito catártico de um castigo bem dado ao vilão cruel e entravando o sentido profundo da história, segundo o qual chega um dia em que as crianças crescem, se viram sozinhas, não se deixam explorar, fazem justiça e passam a prover o sustento dos próprios pais. Não se pode deixar impunemente. Dá em disparate – no caso, outro nome para o desastre literário e psicológico.» (Machado, 2002: 76-77).

Em segundo lugar, sublinhe-se o facto de algumas obras mais recentes, em particular, aquelas que decorrem de um processo de reescrita e/ou de reinvenção, pontualmente a partir da paródia, não esconderem uma intencionalidade crítica mais ou menos aguda, como se pode constatar na edição ilustrada por Anthony Browne ou, até, no conto da autoria de Alice Vieira.

E, em terceiro lugar – e para concluir –, não podemos deixar de sublinhar que este breve estudo ou esta “arqueologia” do conto Hansel e Gretel, pressupondo uma leitura norteada pelo princípio da intertextualidade e/ou por pressupostos comparativistas, ainda que se encontre numa fase muito inicial – esta é, por agoram um estudo que encaramos como “embrionário” e que será alargado e consolidado no próximo ano, possibilizando já uma apreciação crítica não apenas de valores estéticos, mas também de valores culturais, suscitando juízos acerca da actualidade implícita do tópico da “infância maltratada” ou da fragilidade da condição infantil, aqui substantivada no abandono afetivo e efectivo das duas crianças protagonistas. Com efeito, aliado a este aspecto, o realismo notório do incipit, plasmado nas condições precárias de sobrevivência ou na fome, não deixa de inquietar também pelo paralelismo imediato e inevitável que estabelecemos com o presente, com esta realidade sócio-económica que dita e agudiza a vulnerabilidade de tantas crianças. Resta-nos apenas ir acreditando que, um dia, também por cá, e à semelhança da narrativa/ficção relida, surgirá um «pato branco», uma «boa ave» que ajude muitas crianças a atravessar este «grande curso de água» (Grimm, 2012: 158).

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**Bibliografia activa:**


Abstract

There are many similarities between the fields of experimental animation and experimental computer games. For example, conceptually, many examples are subjective representations of the artists’ experiences or point of view; structurally, experimental works avoid the conventions of their medium, seeking to express and communicate in innovative ways; and stylistically, many make use of abstract visual forms as representative devices. It is not possible for an audience to passively engage with such experimental works in the same way as their more conventional counterparts due to the unconventional nature of the media. Instead the work must be ‘read’ by the audience or player so that they can interpret the meaning behind the work.

The author seeks to explore the concept of interpretation through discussion of examples of experimental animation and computer games. Within this discussion design principles which impact upon interpretation of an art work are identified and are explored to help to further define an interpretive language for abstraction. To evaluate these ideas, the author will discuss practical experimentation in the form of game prototype development. The aim being to create a playful experience whilst utilizing the identified design principles to encourage player interpretation of abstract ideas. Finally, by drawing parallels between the abstraction techniques used in experimental animation and experimental games, further experiments are proposed to improve our understanding of how audiences interpret abstract media.
1. Introduction

Abstraction can be applied across many fields for many purposes. In the context of this paper, abstraction will be discussed in relation to the visual and aural elements of media. In relation to the visual aspect, abstraction can be seen as the avoidance of representative forms. In abstract art “It has often been remarked that the word ‘abstract’ is not very happily chosen, and substitutes such as ‘non-objective’ or ‘non-figurative’ have been suggested instead” [1]. This is also true of experimental animation and experimental computer games.

In order to study experimental animation and computer games in depth, we must first seek to define what we mean by experimental. ‘Conventional’ media, in contrast to experimental examples are often a ‘complete’ experience, meaning that by the end of the game or film, even with passive audience engagement, the meaning is clearly communicated and resolution is given. This could be attributed to or be the cause of audiences’ need to find literal meaning in media [2]. In experimental forms the meaning may not be wholly clear upon first viewing, therefore the viewer may be required to watch or play again to interpret their experience. The piece may also require the viewer to shift their perception of the work becoming more ‘intuitive and contemplative’ [3] to expand their understanding. The Unfinished Swan (2012), is an experimental game for the Playstation 3 which encourages intuition in its navigation. Within the game, the user exists in a blank world which is difficult to navigate as all walls and pathways blend into one blank white canvas. In order to navigate the game world the player can ‘shoot’ paint to reveal the layout of the environment and possible routes to move around. This is a clear example of an experimental approach to navigation to draw player attention to movement and environment through interpretation.

It is possible to draw many parallels between experimental animation and experimental game development. For example, experimental animation is often produced by the individual or a small team [4] and the films themselves often seek to communicate personal perspective in an innovative way [5]. Many examples of experimental games are similar, being produced by an individual or small team, for example, the credits of The Passage (2011), Lim (2012) and Proteus (2011) state that the games were produced by individuals or small teams. Aesthetically, similarities can also be identified with visual abstraction commonly employed by both fields to represent or support underlying meaning. Visual abstraction in this context can mean the avoidance of literal representation of character or body, a shift of focus to movement and rhythm or shape and colour to represent complex concepts. Visual abstraction is readily applied to the animated film, as shape, movement and audio are the core modes of communication. Computer games also utilise these attributes with the addition of interaction. Abstraction can be applied in interactive media to connect the game mechanics or rules to implied meaning. Experimental games and animation also require their audience to read the media to take their perceived experience and interpret its meaning, in their own way or based upon the rules and conventions determined by the artist/designer [5].

In this paper, we will explore how experimental animation and experimental computer games both make use of abstraction as a fundamental design concept. We will question the meaning implied through abstracted media and will review to role of the audience as the interpreter of the art work as an ‘open text’. Media analysis is used to identify design principles which are central to the production of an interpretive art work. To evaluate these ideas in practice, a game prototype was developed which aimed to create a playful experience whilst utilizing design principles to suggest meaning for the player to interpret. Finally, by drawing parallels between the abstraction techniques used in experimental animation and experimental games, we propose further experiments to improve our understanding of how audiences interpret abstract media.

2. Defining ‘Experimental’

Experimental, abstract, non-objective and fine art animation are often used interchangeably to describe animation which avoids literal conventions in animation such as linear storytelling and character depiction. Instead the animator “moves towards the vocabulary used by painters and sculptors” [5] and aims to develop their subjective vocabulary in the depiction of abstract forms in motion. Innovation is central to the experimental aspect of animated forms, many artists “personalize their equipment and
techniques as does any fine artisan or craftsman” [4]. The innovation of the animator may be in the development of processes or apparatus. For example the invention of direct animation (drawing straight onto celluloid film) by Len Lye [4]. Others innovate in their mode of expression for example An Optical Poem by Oskar Fischinger (1938) is a work which acts as an “instrument for meditation” [4] as the viewer interprets the meaning of the movement. As with Experimental animation, experimental game design also demonstrates a need for personal expression of the individual or team. The Passage (2007) [5] and Gravitation (2008) [6] by Jason Rohrer are both inspired by painful experiences in his personal life. Innovation is also central to experimental game development as developers tend to focus on the development of new types of player experience over graphical quality and commercial appeal which tends to lead more conventional game development. For example Flow (2006) by Jenova Chen and Nicholas Clark is the product of Masters Research into dynamic difficulty adjustment (DDA) conducted at the University of Southern California [7]. The game mechanics and design enable the player to adjust the difficulty in the game without conscious realization thus self-selecting levels based upon their expertise. Experimental games often rely upon abstraction, using simplified ‘versions’ of standard game paradigms or removing conventions completely to develop new meaning in a similar way to experimental animation, which moves away from graphic and stylistic conventions to create new work.

3. Abstraction in Experimental Animation
All animation is a form of abstraction, as the animated form creates a synthetic reality [8] within which the artist defines the rules. In the creation of this synthetic reality, animation requires that the audience suspend their disbelief (defer their judgment of the believability of an implausible world or event) in order to fully engage with the animated reality [9]. Characters are often present within conventional animation and offer a device for the audience to empathise with throughout a narrative [9]. These elements allow animation to caricature life without the audience disconnecting from the world. However, in experimental animation, it is less likely for characters in humanoid or anthropomorphized (the personification of non-human beings or objects) form to be present. Instead these forms, if they exist can be simplified into highly abstract forms.

Experimental animation has a very close link to audio as many experimental animators produced visuals inspired by or with music in mind. The animator, Norman McLaren developed a technique to utilize animated sound (where the soundtrack is created visually and copied onto the film) with direct animation [11]. The outcome of this process is a direct relationship between the sound track and movement on screen. Synchrony (1971) (Fig. 1) perfectly aligns the movement of shapes and colours with the soundtrack as the visuals of the film are the images used to produce the animated soundtrack [11]. As the sound was created prior to the visuals, the form and timing of movement was defined by the process of producing animated sound. McLaren [11] states ‘In general, the colouring was changed at the beginning and end of musical sentences or phrases for variety’s sake; although no “coloursound-theory” was relied upon, pianissimo passages were usually in muted hues, and fortissimo passages in highly saturated contrasting hues.’ Within this film, it is clear that McLaren was experimenting with technique over direct personal expression, however the application of colour to reflect the sound track adds visual information for the audience to interpret in relation to the syncopation of movement and sound. Furniss [3], in discussing abstract animation in general, describes this facet of the media well ‘It seems that abstract motion pictures are often ‘about’ the need to expand our ability to see, experience and comprehend things in day-to-day life. For that reason, they challenge the viewer to participate in the process of creating meaning.’

The psychologists Heider and Simmel [10] conducted a study into apparent behavior which utilized an abstract animation of geometric shapes moving around in a scene with no specific con-
The study was carried out through three experiments, each of which asked the viewers to interpret the film in different ways. The first experiment asked that participants describe the action of the film; the second asked that a different group of participants answer questions about the ‘characters’ in the film and the third asked another group to interpret the film when played backwards. These experiments found that the majority of participants described and perceived the geometric shapes within the sequence as ‘animated beings’ and therefore interpreted their random movements as motivated actions based upon the characteristics of their movement or the objects which surround them [10]. This study demonstrates a tendency for an audience to anthropomorphize abstract shapes and to interpret the types of movement carried out by the shape in terms of motivated action within a narrative construct.

These films utilise experimental animation to innovate and extend knowledge within their fields but each use different techniques to achieve this. Hider and Simmel’s use of anthropomorphism demonstrates the power of interpretation and this is a technique often utilised in experimental computer games, again furthering the parallels between the two fields. McLaren’s work instead seeks to perfect technical achievement in the visual representation of sound. However, the film could be seen as an anthropomorphism of the soundtrack, as it is represented as a living moving image upon the screen. Personality could be attributed to the different shapes and colours based upon the pace and pattern of their movement should the viewer wish to study these aspects in further depth. In this way, both works help us to question the interpretation of movements regardless of form or artist intention.

4. Abstraction in Experimental Computer Games

As previously discussed, abstraction in experimental computer games can be identified in the visual, audio and design of the experience. The purpose for abstraction in experimental games could be attributed to many factors. Early computer games made use of low resolution or pixilated graphics, often to form simple geometric shapes. It could be suggested that people who play games are aware of this style of graphics and that games which utilize geometric forms or pixel art could perhaps be more easily accepted due to their familiarity. Alternatively, it may be that the small team size involved in development of these games requires the use of abstraction due to time, skill or team size constraints during production.

Lim (2012) by Merrit Kopas is a browser based game for the PC which utilizes geometric abstraction to represent all forms in a world. The environment is a maze, made up squares, the player character is a square and the other beings in the world are squares. Lim utilizes colour to suggest differentiation. The player character is a square which constantly changes in colour. All other beings in the world are either blue or brown. The game requires the player to hold a button to stabilize the colour of the player character, to ‘blend’ in with the beings around them, however the players view becomes obscured the longer they choose to blend as the camera moves close and closer to the character (Fig. 2). Blending is a core mechanic in the game, as other beings in the world will be drawn towards and ‘attack’ beings which are different to themselves. These ‘attacks’ can make it difficult to escape these unfriendly beings.

Animation and colour are clearly a key factors in communication of the game’s core concept, blending will allow the player to go further in the game but will be an uncomfortable experience. The staccato movement and limiting viewpoint of the camera leave the player only a small view of the world they are navigating causing disorientation. Choosing not to blend will avoid this experience but may limit player exploration, due to seemingly negative interactions with other beings. Lim can be read as a game about difference and its mechanics could be interpreted by the player in relation to social, race and/or gender inequality. The abstraction of the world to simplest forms draws attention to movement and colour and in turns magnifies the core themes of...
the game itself.

The Marriage (2006) is an experimental PC game by Rod Humble which uses geometric shapes to represent the game world. The Marriage is the story of a pink and blue square, within a world of circles. The pink square and blue square have different needs, and the player must choose the most appropriate time to intervene to balance the needs of each square. The player must recognize that the needs of one square can have a positive or a negative result on the other square. The game ends when the needs of both squares have not been met, and one has faded into nothing. The player has little control of the two squares; they can direct the characters to move towards one another, the rest of the movement in controlled by physics simulation. The squares float around in space, disconnected from one another. The circles within the world also impact upon the balance as some circles have positive impact, growing the size of the characters whilst other circles can cause the characters to shrink in size. The player can remove the circles from the world to try to negate the impact of ‘negative’ circles.

The game is seen by its creator to represent the complexities of marriage [12]. The game could be read in such a way that the animation and movement communicate different factors which affect a marriage, for example, the disconnection of the characters throughout the game could represent everyday factors which keep a couple apart, employment, hobbies or physical distance. On the other hand, this disconnection could also represent character independence as they move their own way and react differently to player interventions. The role of the player could also be interpreted as mediator within the marriage, for example, the ability to remove any of the circles could be seen as helping the partners to prioritise positive influences on their relationship over negative elements. The game can also be read in other ways, the mechanics are complex and it is not always clear how player intervention impacts upon the balance. It could be seen to represent any system which requires balance such as peace talks between warring countries or pest control in a vegetable patch.

In contrasting these examples with one another, the role of geometric shapes to represent the player or more widely to represent worlds demonstrates a trope in experimental game design. Within the marriage, the blue and pink squares represent a wife and a husband, and are presented within a context. Even if the title is overlooked, the use of blue and pink still have connotations of gender to lead player interpretation. On the other hand, the beings in Lim could be anything with opposing perspectives – animals, humans, cells; it open to interpretation. It could be said from this short study of experimental computer games, that abstracted graphics are often used to focus player attention upon the mechanics, animation or meaning of the experience. Abstracted graphics can remove graphic distractions, drawing the player’s attention and interpretation to the most important elements within the experience.

5. The Language of Abstraction

We intend to show that experimental animation and experimental game design utilize a shared language of expression in relation to abstraction. We suggest that this language requires development but could empower an individual in their perception, interpretation and interaction with these and other abstract forms.

This short study of moving and interactive works suggests that artistic language can be and is presently applied in their analysis. Abstract art in particular provides aesthetic language and conditions with which an individual can interpret experimental media. It is also possible to discuss these media in relation to temporal elements including tempo/pacing, choreography, musicality, and metamorphosis. Animation and game theory underpin discussion of these temporal elements. The interactive nature of computer games requires additional considerations of play and its link to meaning. Salen and Zimmerman suggest that “meaningful play emerges from the interaction between players and the system of the game, as well as from the context in which the game is played” [13]. Context is clearly very important to interpretation, as can be seen by the discussion of Lim in the previous section. Lim is open to interpretation due to the lack of context. The title of The Marriage, on the other hand suggests a context within which the player can interpret the meaning of the game. Interpretation of a different context is much more difficult in this case.

The same is true of abstract art. Much of the early abstract
work of Picasso was abstract in ‘everything but name’ [14] suggesting the artist provide a name to give the viewer a foothold in interpreting the work. Experimental animation also demonstrates this as many examples have representational names such as Lye’s Colour Box (1935) and McLaren’s Mosaic (1966). Abstract art and experimental animation also share commonalities in the development of naming. Many artists moved to naming their works more sequentially in the style of a series of tests. For example the abstract painter Mondrian named a number of his paintings with the pre-fix ‘composition’ including Composition with Color Plates and Gray Lines 1 (1918), and Fischinger named many of his works sequentially including Studie Nr1 (1929), Studie Nr 2 (1930) etc. [15]. This demonstrates the iterative nature of the work and possibly reflects a preoccupation with abstraction more broadly as suggested by Gombrich [1] “if the interest should lie in neither the ‘subject’ – as of old – nor in the ‘form’ as recently – what were these works meant to stand for?.”

Another common aspect of experimental work within these media is the creator’s need for personal expression or experimentation within the work. Many of these works are subjective and provide insight into the current thinking of the artist. Studies of Lim suggest that it is an interactive account of the personal experiences of the designer [16]. Fischinger also held personal beliefs about ‘true creation’ believing that “[17] it could be said through study of his work, many of his pieces search to achieve this goal.

6. Abstraction and Interpretation: Practical Experimentation

The authors developed a game prototype based upon this research into interpretation of abstracted graphics within experimental games. This practical experimentation aimed to explore the ways in which visual and interactive abstraction can alter interpretation. Prototype development was undertaken in two phases, the first was the production of a series of digital toys to test interaction and the second phase was development of a prototype game called Chreod.

We will only find true artists and masterpieces among the so-called experimental films and filmmakers. They actually use creative processes. The film isn’t “cut”, it is a continuity, the absolute truth, the creative truth”

The first phase of development tested routes to create a sense of play and engagement with meaning in an interactive experience. The authors produced a series of digital toys which utilized different input and feedback methods to engage the player physically and visually in the game experience. Many of these toys made use of simple geometric shapes in order to allow the player to project meaning onto the assets. During the testing phase, one digital toy in particular demonstrated potential.

Blend was produced for iPad and required the player to help a cube to navigate a hostile landscape (fig. 3). The landscape was littered with geometric forms which the player must negotiate in order to reach the exit. These forms were a series of cubes connected in T L and C like formations. The landscape was scanned periodically by a search light to check for isolated cubes, and if the player was not aligned to one of these environmental shapes it would cause the game to end.

The player could not directly control the movement of the object, instead they would select a point on the map and the cube would move in an elastic manner from its start position to this new position. This addition of easing in the beginning and end of the motion was designed to cause a delay between player interaction and object movement in order to focus attention on the timing of their interactions. This prototype was inspired Lim’s blending mechanic. Informal testing of Blend demonstrated that the design required players to concentrate upon timing to complete the level and that environmental awareness became more important to their success. Blend greatly informed the design of mechanics to lead player attention in the development of the final prototype.
The second phase of development was the production of a game prototype called Chreod (fig. 4). This prototype is inspired by Waddington’s concept of The Epigenetic Landscape [18]. Waddington developed a metaphor for cell differentiation as an object rolling down a landscape, and at any point, the landscape can branch and the route which the gene takes will change the course of its development. The core concept of an environment shaping the development of an object was used to inspire the design of the game.

Chreod allows the player to modify and manipulate parts of a landscape which the sphere exists within. As the player changes the landscape, the sphere will roll around, ‘exploring’ the world. Within the world there are coloured areas, as the sphere rolls over these it will change in colour, being affected by the landscape. If the player can cause the sphere to roll over a number of areas of the same colour, the player is rewarded with a speed boost. Should a player roll over a different colour, the speed is lost, and the object blends this new colour into itself; the landscape truly ‘shapes’ the colour of the object.

The lack of direct interaction with the object was inspired by The Marriage where a player must choose the ‘correct’ time to intervene. In this prototype, gravity and physics simulation control sphere movement, therefore, the player must interpret if their interaction will change the landscape enough to impact upon the path of the sphere. Interactions are unpredictable; if an interaction is too early, a boost in speed, if the interaction is too late, it may have no impact at all.

The visual abstraction within the game is based upon simple differentiation; round organic forms represent that which can be changed and sharp geometric forms represent those which cause the change. The contrast in form hopes to offer interest for player interpretation. The landscape has only two colours at present, blue and red. Gender specific colours were avoided but contrasting colours prove important should colour preference play a role in the way a player chooses to navigate the world.

This prototype was recently completed and it is hoped that testing can take place to analyse the relation between the abstracted visual style and game mechanics and player interpretation. In particular the authors hope to host focus groups where players will interact with the prototype and will provide qualitative description of their understanding of the purpose of the game.

7. Discussion and Conclusion

By identifying common elements across a range of experimental animations and games, we have shown that there is a need to further refine ways of discussing abstracted media to equip the individual with tools to engage with abstract work more readily. Experimental animation and computer games demonstrate a wealth of personal expression and innovation in terms of technologies processes and game mechanics. These media present the audience with an experience which they must interpret and challenge the viewer or player to reconsider their views or perception of the work and the world around them. This study has also shown that practical experimentation with abstraction can also offer new insights into the understanding and interpretation of abstraction within digital media.

This exploration was limited to the study of geometric forms within experimental game and animation production. Further work in this area could include study into more ‘organic’ experimental animations and games and also the study of experimental film more broadly. It is clear that these two forms run in parallel, sharing many common attributes. Further exploration of cross-pollination in terms of practice and also inspiration may also help us to better understand the underlying motivations of the artists and in turn the work itself. It is possible to use the parallels between these media and other abstract forms to inspire the development of further media and also perhaps the expansion of the language of abstraction.
References

Abstract
More than legal documents which guarantee intellectual and industrial property, patents are required to fully explain and describe its object of interest. Illustrations are mandatory to allow the visualization and show the different parts or usage of an invention. This paper takes a look at patent illustrations evolution since the early draftsman years until the most recent digital tools to obtain figures for this purpose. It is also proposed an illustration for an engineering device to be registered in a patent.

Keywords
Patent illustrations; Technical drawings; Engineering digital sketches.
1. Introduction

Patents are documents that have the need for an extensive and full description of mechanisms, functions and ideas. Drawings, schemes, graphs and infographics as illustrations are used to help in this effort to communicate the invention which incorporates the patent. In fact, these illustrations are mandatory since the United States Patent & Trade Office opened in 1790 [1]. In the nineteenth and mid twentieth century these illustrations featured artistic techniques like shading, multiple perspectives and texture showing a craftsman quality. Throughout the times these illustrations have been simplified, losing the artistic quality and nowadays patent drawings are simple sketches very different from the early years. This paper addresses the changes that occurred analyzing the evolution from the first artistic illustrations until the currently technical representations and sometimes doodles. Furthermore it takes a look at the advantage of using engineering design software to render pictures for patent illustration.

2. Historical Background

Inventive drive is a determinant characteristic of humans, and has been a factor of success for humankind development. The ability to idealize and build tools for hunting together with strategies to improve the outcome for obtaining food is well documented since the Paleolithic [2]. Cave paintings from early eras such as the Aurignacian period, approximately 40,000 years ago show animals and humans in hunting scenes [3]. This was probably the first artistic expression to illustrate a technological development and help to explain how to use hunting tools and techniques. Archimedes inventions like siege engine and the well-known screw pump were explained using illustrations. Probably the best examples of early invention illustrations are the ones of Leonardo da Vinci as shown in Figure 1 and Figure 2, showing comments alongside with sketches [4]. This representations have already evolved from the bi dimensional cave paintings to three dimensional and perspective views.

Despite some evidences that ancient Greek cities suggested something like the usage of patents [5] and the fact that “letters patent” were issued as royal grants in England circa 1331 [6,7], it is interesting to note that the history of patents and patent law is considered to start contemporaneously to Leonardo da Vinci, with the Venetian Statute of 1474 issued by the Republic of Venice [8]. Later in 1555, France introduced the concept of publishing the description of a patent [9] and during the reign of Queen Anne (1702-1714) the English Court lawyers enforced this requirement [10] coincidentally during the colonial period, exporting it as a foundation for patent law in the United States, Australia and New Zealand. Describing the object of invention was common to all of these rules and laws also as the requirement for every patent be accompanied by an illustration depicting the applicant’s invention.

In the eighteenth, nineteenth and early twentieth centuries, patent illustrations revealed very rich and detailed artistic representations as shown in Figure 3 with the Diving Dress filed in 1810 by C. Hall in which the body and face of the user was drawn in impressive detail.

Some other interesting examples of colorful and detailed in artistic techniques illustrations are seen in Figures 4 and 5 show-
ing the Artificial Arm filed in 1865 and the Flying Machine filed in 1869 respectively. A cross section with three dimensional view is extremely detailed showing the hidden mechanisms rendered with colors and shades shows the quality of the Artificial Arm patent illustrations. The Flying Machine patent illustration shows some details in the user’s hair and mustache and uses “flying colors” to distinguish different materials.

However this colorful drawings were troublesome when trying to reproduce in order to obtain and distribute copies of the patents and in the late 1800s the United States Patent Office enforced a rule that patent drawings should be done with black ink. Still, it is possible to submit a color illustration but is mandatory to fill a petition and pay an extra fee.

Even though the color was devalued, details remained very important and calligraphy allowed to label figures and be used as signatures for draftsman recognition [11]. Hentz Bicycle patent filed in 1899 is a good example as shown in Figure 6, with the detailed mechanical transmission showed also in a cross-section, a chain gear and an axle. Interesting to see that the illustrator did not forgot to shade the ground beneath the wheels.

The first decades of twentieth century showed that details still mattered to many of the draftsman, working with black ink on white paper, using line shading (Figure 7) and stippling (shading with dots) visible in the helmet and user face in Figure 8 adding a realistic element to the patent. These illustrations are also showing some changes in the usage of calligraphy for labels recurring to fonts that are well defined and closer to type machine styles.

The eighties and nineties of the twentieth century observed a dramatic evolution in technologies like personal computing, allowing to obtain digital drawings with simpler presentations and less details. Saving both money and time was possible with this new graphic tools, and the draftsman quality was reduced and in some cases even lost. The PC peripheral Doll of 1998 is an example that shows this new approach as shown in Figure 9. This occurred after the patent office relaxed its drawing rules, allowing inventors to focus much more on patent claims, rather than the drawing.
Figure 10 is relative to the Google Glass Anti-Theft Mechanism patent filed in 2012 and represents the actual trend for simplification and digital illustrations that differ completely from the 1800s illustrations with user faces presenting skin color and detailed features near to figure paintings. This is very representative of the actual state of the art in patent illustrations.

3. Proposed illustration for an engineering device

After analyzing the evolution of patent illustrations the authors involved in a process of filing a patent proposed the following solution for an engineering device as seen in Figure 11. This figure shows a technical representation of the device with three views featuring local sections and numerical labels and a forth image with a three dimensional render of the assembled device. Figures were obtained from CAD (Computer Aided Design) software used to design the apparatus and simulate the usage in order to optimize geometry and materials. This is yet another advantage of using this software that allows to obtain illustrations that can be used for patents or marketing purposes such as catalogues, brochures or internet disclosure.

4. Conclusions

Humankind evolved through technological developments with invention of tools that help in the most various purposes from basic needs as hunting for nourishment to touchpad portable computers for leisure. Since the primary cave paintings to the modern three dimensional computer models, man tried to represent, explain and archive ideas, strategies and devices for cultural, academic, commercial or personal purposes. Renaissance brought the first legal framework for intellectual and industrial property parallel to new artistic techniques that improved the representation of inventions with perspective and depth drawings. The natural evolution of art contaminated patent illustration with beautiful and detailed representation of inventions until the twentieth century, when the color was considered a problem to produce copies and disseminate patents. However detailed and rich drawings were done in black and white showing the draftsman abilities, until the last few decades of twentieth century when digital computational tools allowed to obtain this figures spending less resources. The focus on cost cutting depreciated the quality of drawings and nowadays patent illustrations are very poor in details and fail to represent objects and users with realistic features.

Nevertheless with the new tools, such as CAD software and graphic design techniques it should be possible to improve the quality of patent illustration. Furthermore the digital media is growing into substituting physical media allowing to overcome the problems associated with replication and distribution of colored illustrations. The benefits from this improvement will bring new opportunities for inventors, users, illustrators and entrepreneurs.

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Creative, Practice-Led Investigation into the Picture Book as a Medium for Introducing Children to Meditation

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Abstract

Until now, despite the recent interest in meditation around the world, there have not been many picture books for children on meditation stories. Furthermore, although images of humans are often used to explain meditation, the figures are usually seated and have closed eyes. This kind of presentation is used even in children’s books. These representations do not reveal the wealth of the underlying meanings or the value of meditation and do not sufficiently convey the real and complete intellectual and emotional experience that meditation texts can offer. In particular they do not adequately cover ‘Timeless and Placeless meditation’, which can be done while engaged in any activity.

My research is focussed on designing a new and creative children’s picture book on meditation that will explain Timeless and Placeless Meditation in ways that are relevant to children. Drawing on my own knowledge of this form of meditation and my experience as an artist, together with exploratory creation of a number of stories, I am putting together a book that I hope will be a new paradigm for children’s picture books on meditation. The images are intended to engage and inspire the audience to understand Timeless and Placeless Meditation in a way that reading lots of text may not. This is important because, as is generally understood, young children typically find it difficult to process large volumes of text and are often more easily engaged by exciting and humorous images.

My story explores the subject of Timeless and Placeless Meditation though the adventure “A Journey to Me”. I want my readers to feel able to do Timeless and Placeless Meditation themselves and so my picture book encourages the reader to identify with the girl in the story and practice Timeless and Placeless meditation in their own lives.

Keywords

Timeless and Placeless Meditation, Children’s book illustration
1. Introduction

This research is focused on making a text and meditative illustration for a children’s picture book. The book emphasizes the characteristics of meditation, which is Timeless and Placeless. It consists of a short story on meditation that explores the meaning of Timeless and Placeless Meditation and investigation through the making of visual images. It is expected that an illustrated book can offer assistance in finding the true meaning of Timeless and Placeless Meditation.

Thus, the aim of this research is to create a Timeless and Placeless Meditation picture book for children. This research explores the abstract meaning of meditation through text and visual images suitable for today’s children. The story aims to help children understand and apply Timeless and Placeless Meditation through play and knowing their body in both a physical and spiritual way.

2. Background

Originally, illustrations in meditation books were aimed at adult audiences. Only recently have they started to move into the realm of children’s picture books on meditation. These books, for example, Zen Painting [1] and Zen Painting and Calligraphy [2], typically contain general Buddhist images such as that in Figure 1; they tend to use only black ink, and the subjects are usually flowers, birds, and landscapes [1], the aim being to express the natural world. Thus, there is limited expression in terms of subject and material.

Although images of humans are often used to explain meditation, the figures are usually seated and have closed eyes. This kind of presentation is used even in children’s books (Figure 2). Peaceful Piggy Meditation [3] is a typical example as one of the children’s picture books for meditation. Most of the images show the pigs sitting with crossed legs and closed eyes. As another example, Relax Kids [4] starts every page with the sentence “Close your eyes”. These representations do not reveal the wealth of the underlying meanings or the value of meditation and do not sufficiently convey the real and complete intellectual and emotional experience that meditation texts can offer.

In particular, there are no illustrated books for children on “Timeless and Placeless Meditation” or only a few pages in a large children’s picture book. This is the gap that I am specifically aiming to fill.

Timeless and Placeless Meditation is from Won-Buddhism from South Korea. Won-Buddhist meditation is a form of meditation transcending the boundaries of time and space and its characteristic is to let people obtain freedom of mind through maintaining one mind whatever task are they involved in at any time and any place. For example, “a carpenter holding a hammer can practice meditation while he/she is working. Also illustrators picking up a pencil can do it while they are drawing” [5].

Zen paintings were usually painted by the Zen master himself for a group of specialist trainees. All these so-called Koan pictures evoke the decisive moment between non-enlightenment and enlightenment. To successfully produce such works, only the man who has personal experience of the truth of Zen is suitable, even though his technique may not be polished [1]. A man who can paint Zenga need not be a Zen monk. If the painter is steeped in Zen, then his work will automatically have a Zen flavour [1]. However, most of these artists were engaged in a spiritual quest, a secular search for wholeness, and most of them regarded the process of making art as a kind of meditation. Zen was one of many spiritual inspirations for modernists over the decades, along with Alchemy, Tantra, Taoism, Theosophy, Shamanism, etc [6].

Today there is a wider interest not just among Zen masters and monks in drawing visual images for meditation stories to show the way and feeling of meditation. The depth of enlightenment and visual communication of the subject in Timeless and Placeless Meditation makes this topic a good study for presenting the importance of my research. This is a visual investigation that focuses on simplifying the abstract meaning of Timeless and Placeless Meditation and comparing this dynamic meditation to the more stereotypical form of calm meditation.
By means of theoretical and visual practice-led research, I have created a picturebook to reveal Timeless and Placeless Meditation to children through extensive illustrations that depict concepts beyond “sitting meditation”. Explaining Timeless and Placeless Meditation to children by means of illustration is an idea that has not been widely studied until the present. To support and reinforce the main book, I have also developed a learning activity book to help children apply Timeless and Placeless Meditation in their playing. Through puzzles, colouring, mazes and moving stickers I encourage them to think about their mind and enjoy Timeless and Placeless Meditation. The result of the study is an original and primary contribution to the field of children’s books on meditation: a new and creative meditative children’s picture book that is based not only on using spiritual viewpoints as well as physical viewpoints to explain Timeless and Placeless Meditation in ways that are relevant to children, but also on artistic methods of instruction.

3. The Main Book

3.1. Framing the Early Creative Practice: Image

Before choosing a story, I did some experimental drawing on Time and Place to find connections with life and meditation, and carried out location and observation drawing and character development. This process was intended to help in selecting a story that could reflect the meaning of Timeless and Placeless Meditation. As Salisbury says: “the way in which a personality appears and grows through the initial process of drawing may well influence or even dictate the direction of the narrative” [7]. I chose vinyl printing for creating the images for my picturebook. Vinyl is harder than lino and so allows more detail. This is important for my research because large or small images evoke greater emotion than normal size [8]. I cannot use large size images in a children’s book because of space constraints. So I needed to use small images to show hidden detail that children can explore and find. This is important because, as Salisbury and Styles comment, “what most educators and psychologists do agree about is the huge potential of learning by looking” [9]. My incorporation of small images with hidden detail is intended to help engage the children, and allows humor to be incorporated.

3.2. Exploration for writing a story

How to achieve the best effect? How to explain Timeless and Placeless Meditation? I initially focused on collecting ideas from illustrated children’s books on meditation. I explored and analyzed the themes and meanings in existing meditation storybooks through a comparative analysis of illustration and creative practice.

One of the existing books I analysed was The Happy Book [10]. Although this book is not explicitly about meditation, the way of becoming happy on which it is based is very similar to that of Timeless and Placeless Meditation. Its message is essentially “squabble less, share more”. One of the reasons of meditation is to reach the “middle path”, i.e. to find compromise solutions. The Happy Book gives clear and explicit statements to children on each page, for example “Squabble less, share more”, “Grumble less, giggle more”, “Worry less, wonder more” and so forth. However I wanted to take a different and more implicit approach to exploring how to do meditation. I wanted to give children not so much an instruction manual but rather the motivation and interest to enjoy choosing to explore meditation themselves. I therefore thought about using metaphors in a Timeless and Placeless meditation story for children. However, effectively delivering my main idea by metaphor brings its own challenges. I realised that it could be complicated for young children to easily follow so I would need to practice and choose my metaphors carefully. I also decided that I wanted to avoid using the word ‘meditation’ because it could be off-putting for children who have some prejudice against this kind of word and think that it is not interesting. Instead, I planned to deliver my meaning by more subliminal messaging.

According to Illustrating Children’s Books [7], a quite abstract idea is best expressed through a particular synergy of words and pictures. Perhaps the best description of this phenomenon is that coined by the illustrator and author, Maurice Sendak. His term is ‘Visual poem’ [7]. For my final illustration I was inspired by this concept of a ‘visual poem’. Thus I explored making a story form of visual poem on Timeless and Placeless Meditation. Applying Sendak’s ideas to my own work, I realized that illustrating meditation stories was best done via a combination of images and short
text, not by a large amount of text with no illustrations. Therefore, through my study of Timeless and Placeless Meditation, I tried to make a short text with few words. In addition, I decided it is best not to use the word “Meditation” directly because using metaphors can give a stronger message, and avoid prejudice on the part of reader.

I considered how to communicate the activity of Timeless and Placeless Meditation through the story and visual images for children. As explained in the Scriptures of Won-Buddhism: “If one can only practice Sŏn while sitting but not while standing —this would be sickly Sŏn indeed: …therefore, even when involved in disturbing situations, the mind should be undisturbed; even when involved with greed-creating sensory conditions, the mind should be unmoving — this is true Sŏn and true absorption.”

This is the final goal of Timeless and Placeless Meditation. To reiterate the main principle of timeless Sŏn: “When the six sense organs are free from activity, remove distracted thoughts and nurture the one mind, when the six sense organs are involve in activity, remove the wrong and nature the right” [5].

In Won-Buddhism, the six senses are eyes, ears, mouth, nose, body and mind [5]. So I aimed to make a story for children to focus on how to manage the sixth sense, and how they can be freed from activity as is the goal of Timeless and Placeless Meditation. The visual narrative constructed upon producing a book titled “A Journey to Me” would introduce the effect of meditation through eyes, mouth, nose, ears, body and mind that focus on the spiritual as well as medical and physical uses of these senses. I decided not to give my character a name so that the children engaging with the book can identify her as themselves more easily.

These considerations lead to the rough storyboard in Figure 3. The story is divided into six mini-sections, each focusing on one of the six senses of Won-Buddhism. Each section begins with a head page featuring the girl with the relevant sense organ (eye, ears, mouth etc.) highlighted. This is followed by several pages illustrating how the sense can be used within Timeless and Placeless Meditation.

Although there is a simple story, the images are intended to engage and inspire the audience to understand Timeless and Placeless Meditation in a way that reading lots of text may not. This is important because, as is generally understood, young children typically find it difficult to process large volumes of text and are often more easily engaged by exciting images. My goal is to explore how the abstract subject of Timeless and Placeless Meditation can be expressed in a simple and humorous way for children. To reflect the flexible nature of meditation the book will contain a mixture of both dynamic and peaceful meditation images.

3.3. Combining story and image

As explained earlier, the incorporation of hidden detail that children can explore, as well as humor within the details, is an important part of my approach. I therefore carried out further
development of the initial images in Figure 3 to incorporate this. Some of the results are shown in Figure 4. Note for example the miniature girl cutting the carrot with a chainsaw and her penguin friend fishing from the cheese on the Eat well table.

I also added a map frame to the section head pages (the Mouth page in Figure 4) to provide a more engaging picture and to reinforce the book’s theme of a Journey to Me. Also fitting with the journey theme, each of the six sections has a different mode of transport tying it together. This is exemplified by the bus in Figure 4.

4. The Learning Activity Book

4.1. Why an activity book?

Timeless and Placeless Meditation is an active process: it can be done while engaged in any activity. A simple picture book has many advantages but does not bring out the practice of meditation through play. To address this I developed an activity book that encourages children to explore Timeless and Placeless Meditation through a wide range of different activities. My motivation for this work was not only to encourage a more active form of meditation but also to give the children the opportunity to do this themselves and learn through their play.

Although activity books relating to meditation do exist, such as Living Values Activities for Children [11] (Figure 5), they are frequently aimed at parents, rather than being directly accessible to the children themselves. My goal is to engage children directly, so a different approach was needed.

I took inspiration from activity books unrelated to meditation, such as the Usborne Farmyard Tales Activity Book [12] (Figure 5). This book contains an engaging selection of activities such as puzzles, colouring, stickers and dot-to-dot. My aim was to harness this type of approach to provide a vehicle for children to learn and apply Timeless and Placeless Meditation to their lives.

4.2. Activity Book Development

Starting from the Main Book, I developed two or more activities for each section. These include puzzles, colouring, mazes, flaps and moving stickers and magnets. In each case the activity is designed to help the child think about their body and senses and through this to engage in Timeless and Placeless Meditation.

Figure 6 shows two pages from the Learning Activity Book. On the left is a puzzle from the Body section: Match the dance moves. Using of the characters from the Main Book, the girl and her penguin friend, ensures a strong link between the two books so that they can be effectively used together.

On the right is a moving sticker activity from the My Mind section. The child is invited to move a red, yellow or green bud onto the girl’s head whenever they help someone, share their toys or say something nice. This links closely to the corresponding page of the Main book ‘…And ready for the day’ which has a similar image of the girl with buds on her head. The concept here is thinking in a positive way to face the day’s challenges. The sticker moving activity in the Learning Activity book is designed to draw the child into positive thinking and actions. This kind of positive thought and active training is key to Timeless and Placeless Meditation.

5. Conclusion and Further Work

My research so far has lead to the creation of a main picture book plus a learning activity book to explain Timeless and Placeless Meditation to children and encourage them to apply and enjoy Timeless and Placeless Meditation in their lives and playing. Explaining Timeless and Placeless Meditation to children by means of illustration is an idea that has not been widely studied until the present, and my research forms a new paradigm in this area.

There is still much to do, however, to fill the current gap in
children’s literature. For example, the use of a girl as the main character makes it easier for girls to identify themselves with her and so to practice Timeless and Placeless Meditation themselves, but it may be more difficult for boys to do so. Indeed, as McCabe, Fairchild, Grauerholz, Pescosolido and Tope comment, “Differences between the presence of males and females in books have implications for the (unequal) way gender is constructed”[13], and this is something I have also seen this in my own (albeit limited and anecdotal) experience. For example, when I showed my books to girls they were excited and asked me about the story, but when I did the same to a young boy he said it was a girl’s book and wasn’t interested even to know the story. Timeless and Placeless Meditation can be of great benefit to everyone and so it is important that boys do not get the idea that Timeless and Placeless Meditation is just for girls. In order to engage boys effectively it is likely that a different character and possibly also a different style will be required; further research in this area is needed.

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Meaningful Animation in e-Picturebooks

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Abstract
Informed by picturebook and multimodality theories, this paper analyzes how animation works as a meaningful mode that conveys narrative in picturebooks. Starting with the different animations present in the codex picturebook, from the simple movement of turning the page to the paper-engineered animations of pop-up books, we move to how animation is part of a multimodal meaning-making system in electronic picturebooks. Technical considerations include a comparison of embedded video animation and sprite animation adapted from videogame development. Examples of meaningful animation in selected e-picturebooks are discussed.

Keywords
animation, multimodal, picturebook, e-picturebook, sprite animation, story apps, enhanced e-books

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1. Introduction

In this paper we will look at the electronic picturebook (often referred to as the enhanced e-book or storybook app) through the lens of picturebook scholarship, with a particular focus on theoretical models that view the picturebook as an interactive, inter-animated, symbiotic system of modes that, taken together, create narrative.

We feel picturebook scholarship provides insights that can be used to test the meaningfulness of the additional modes afforded by the multitouch tablet, which include animation, interaction, and sound. We will be focusing on interactive, replayable animation as a mode that can enhance, contradict (irony), and/or carry the narrative. We hope this discussion will be of use to those wishing to create rich, meaningful, interactive animation in the e-picturebook.

2. The Picturebook as a Multimodal Text

“A picturebook is text, illustrations, total design; an item of manufacture and a commercial product; a social, cultural, historical document; and foremost an experience for a child.” As an art form it hinges on the interdependence of pictures and words, on the simultaneous display of two facing pages, and on the drama of the turning page.” [6] (Bader, quoted by Kiefer)

In the history of human communication, the visual system preceded the writing system. In western cultures, however, the verbal has been for many centuries the primary, most established and “prestigious” semiotic mode. But, in the last 50 years, the visual has been progressively regaining importance. Kress and van Leeuwen [9] consider this shift to have had a great impact on the way we understand the world and how our subjectivities are formed. The emergence of the picturebook format in the 1960s is part of this process of “the rise of the image”.

The multimodal reading process is typical of picturebooks which convey narrative through the interplay of the modes of words and pictures where “the text [is interpreted] in terms of the pictures and the pictures in terms of the text in a potentially never-ending sequence.” [13]

Many scholars have discussed the relationship between images and words, and how together they create meaning in a picturebook. Nodelman considers the relationship between words and pictures ironic because images and words have distinct narrative qualities and tell us different aspects of the same story: “each speaks about matters on which the other is silent” [11]. Steiner [14] (quoted by Sipe) compared the picturebook to an opera using the concept of Gesamtkunstwerk, or a total multimodal work of art that combines words, visuals, sound, and movement. Lewis [10] discusses the “interanimation” between words and pictures and proposes an “ecology of the picturebook”, making it possible to consider the picturebook in all its “flexibility and complexity”. In the picturebook, as in ecosystems, the elements are diverse and are all connected; any change in one of these elements results in changes in the ecosystem as a whole.

Using the lens of picturebook scholarship to view the e-picturebook allows us to see it as the offspring of the picturebook, and how the integration of the e-picturebook’s additional modes of sound, interaction, and animation has the potential to generate even deeper and more complex narratives.

Multimodality in the picturebook and subsequently the e-picturebook is described in a seminal article by Al-Yaqout [2], in which she states, “Potentially, the iPad could result in the reformulation of conventional ideas that have bound picturebook studies for the last 50 years”. Al-Yaqout very usefully gives a précis of the scholars who have defined and discussed the picturebook as the quintessential multimodal text, including Nodelman, Nikolajeva and Scott, and Sipes, summing up with her own succinct definition, “The amalgamation of words and images is the most important idea associated with the study of the picturebook. It communicates two of the main ideas connected to its meaning, namely, text and image in an interdependent meaning making operation”[2]. Like Al-Yaqout, we believe that the well-conceived e-picturebook adds to the traditional picturebook’s integration of text and art with additional modes and affordances, including sound, interaction, and short, replayable animations confined to a single screen.

There is a tendency by some parents and educators to view the picturebook in both print and digital formats from an instrumental point of view, seeing it primarily as a tool for developing the skills of reading and writing, while failing to recognize the e-picturebook as a literary artwork. Some organizations [5] recom-
mend that e-picturebook developers cut back on the interactive elements, believing they interrupt the [supposed] linear flow of the narrative, confusing the child and reducing his or her ability to understand the story.

However, the reading process in a picturebook, even in codex format, is non-linear: Nodelman [11] describes the opposing push and pull of narrative and pictures. Sipe [13] agrees with him and says, “This tension results in the impulse to be recursive and reflexive in our reading of a picture book: to go backward and forward in order to relate an illustration to the one before or after it”.

We feel that the artistic range, sophistication and scope of the picturebook extends far beyond spelling and the sounding out of one- and two-syllable words, and that the current view of the e-picturebook as no more than an early literacy tool highlights a misunderstanding of the scope of the picturebook as well.

For Lewis [10], the meaning-making process in picturebooks happens in the act of reading the composite text. This perspective is also critical in the analysis of the well-designed e-picturebook, where the participation of the reader is even more direct and crucial in the meaning-making process. This leads us to another distinguishing characteristic of the contemporary picturebook—its playfulness. As noted above, while some studies [5] say that children can be distracted by the interactivity of e-picturebooks, it is important to consider that playfulness is a characteristic already present in many print picturebooks. The difference is that playfulness in print picturebooks is an artefact of the creativity of its authors and illustrators and is necessarily connected to the narrative, while in e-picturebooks, some naturally playful elements like interactivity are a characteristic of the medium, and may not be directly connected to the story.

A Present for Milo [26] by Mike Austin is an example of an e-picturebook with animations that are unrelated to the narrative. In this story a cat chases a mouse through the house, not knowing he is actually being led to his surprise birthday party. Tap-initiated animations such as a toy rocket taking off, and scenes in paintings that can be moved comprise the bulk of the user-activated animation, and most of these have nothing to do with the story. Many developers promote their e-picturebooks with claims such as: “over 100 interactions”, as if busyness was the only necessary virtue of an e-picturebook.

3. Animation in the Codex Picturebook

Animation has always been implicit in print picturebooks in “the drama of the turning page” [6] (Hader, as quoted by Kiefer) and the movement of the eye. Skilled artists have long known how to direct the viewer’s gaze in a painting, from where to look first to controlling subsequent visual movement with vectors created with the intelligent use of colour, tone, size, and line. In the picturebook, the designer will, ideally, build on these elements in the illustration, as well as the tone and rhythms of the text, to create imaginative and supportive typography, layout, page format, and other features of the book design to give movement to the act of reading.

In her lavishly illustrated book Para Ler O Livro Ilustrado, Sophie Van der Linden examines movement in the picturebook, and the devices illustrators employ to convey it. She points out that these can range from compressing all the stages of an event into a single illustration, so that its unfolding occurs as the eye moves from left to right. Another way to embed an animation in the mind of the reader is to illustrate unfinished movement, such as an object depicted in the middle of a fall. “...certain painters conceive of an image that gives the illusion of a moment seized from a time continuum. [our translation]” [15] She also notes how some picturebook illustrators have adopted the graphic conventions of comic books, such as using strip panels, or drawing radiating lines around an object to suggest movement, strong emotion, sound, or radiating light.

The turn of the page is such a strong animated element and so suggestive of the unfolding of a story that the skeuomorphic animated page turn, complete with the sound of the paper, has become a characteristic feature of the e-picturebook. The turning page can also suggest the passage of time or change of scene, similar to an ellipsis in text, a fade to black in film, or a curtain fall. As in theatre and performing arts, the picturebook, along with other illustrated sequential narratives, moves by changing from scene to scene and the controlled reveal of events. “Drama and film are ... art forms that we experience simultaneously in time
and space. The picture book, of course, is another of these hybrid forms...Steiner, the literary and aesthetic theorist, argues that “the illustrated text is ... a mixture of artistic media epitomised in Wagnerian opera.” [14]

More concretely, motion and animation in the picturebook have been produced by paper engineering since the 14th century. Paper engineering animates scenes and characters, giving the illusion of life.

“The term ‘pop-up’ is a catchall term used for dimensional and movable books... The force at the centre of all pop-ups is kinetic energy. Kinetic energy is energy that is the result of motion. Kinetic energy in pop-ups is created by opening a page, pulling a tab, or turning a wheel. Kinetic energy is the life force of pop-ups and paper engineers.” [4]

Movable mechanisms in books can include mini flipbooks that simulate frame-by-frame animation, paper cams and reciprocating arms to create irregular movement, and dragging a cut-out image through curving slots to create rotation and organic movement. Animation in movable books prefigured and inspired the child-controlled and replayable animation in the e-picturebook. A very funny use of paper animation in recent children’s books is the Flip-o-rama in all of Dav Pilkey’s Captain Underpants [15] books. With it, Pilkey satirizes the inanity of everyday assembly instructions, while obviously delighting in the efficacy of his crude two-page flip animation to convey the slapstick violence of, say, a hero repeatedly bashing a monster on the head. Amusingly similar to the Ikea directions on how to put together your new bed (“insert tab b into slot a”), Pilkey’s flip-o-ramas always show an outline of a hand on the left-hand page labelled with “left hand here” and an outline for the thumb on the facing page inscribed with “right thumb here”.

Another recent example of paper animation is the pop-up version of Oliver Jeffers’s The Incredible Book Eating Boy [16]. In this story, a child finds that the more books he eats, the more he knows. He loves being smart, so he eats more and more books, but as he reaches his saturation point, his brain becomes scrambled by too much information and he starts to feel sick. He stops eating books and starts reading them instead. In this pop-up book, turning a wheel will activate an animation of the boy’s stomach churning around chewed-up books. Another mechanism is a pull-tab that releases a little folded flipbook animation of the boy turning green from finally eating too many books. The movable features in this pop-up book are meaningful because they relate directly to the narrative and amplify it. Using the hand (engagement of the reader’s body) to change the inner state of the boy is a way to induce empathy and involvement in the reader with the predicament of the character.

An interesting coincidence, or perhaps not, is that with the rise of the interactive digital book for children, there has been a concurrent resurgence in the number of movable books published, not only those reviving older paper technology, but also interesting, low-tech innovations such as Hide and Eek! [17], by Knock Knock, a picturebook whose illustrations are invisible in daylight but visible when the book is viewed with a flashlight in a dark room.

4. Is It an Enhanced E-book, a Story App or an E-picturebook?

There continues to be a blurring of the distinctions between e-books and apps, which is compounded by the problems of categorization in the Apple app store and other online retailers. In actuality, a continuum of affordances is exhibited by the different formats of e-picturebooks, rather than separation into distinct entities. The capabilities of e-books, enhanced e-books, and apps frequently overlap. The term “enhanced e-book” has been used for e-books and apps, depending on the technology used to produce them and/or the category the publisher feels it is most advantageous to place it in with online retailers. The term enhanced e-book is frequently associated with the epub format. Its interactive capabilities vary, but may include narration, word highlighting and pronunciation, dictionary, and format and font adjustment. In comparison, the professionally-produced iPad app can be much more interactive and make use of the iPad’s built-in camera, microphone, accelerometer, and multitouch. The iPad allows for eleven simultaneous points of interacting contact with the screen. “Think of three children all using both hands at the
same time." [5]. Skilled designers and programmers can create interactive mechanisms such as the slider, tap to hide/reveal objects, tap to activate sound or animation, drag-and-drop, playing a virtual musical instrument, wiping away a page to reveal another underneath, and more.

So with the understanding that the terminology for this new digital multimodal form of children’s literature is evolving, we are using “e-picturebook” (short for electronic picturebook) as a general term to encompass the range of formats from e-book using an epub-type frame, which allows for embedded media, to a coded app.

5. Meaningful, User-Controlled Animation in the e-Picturebook

The animations in many e-picturebooks have been translated directly from the paper engineering found in centuries of movable books. The movable book’s flap lift has become the e-picturebook’s tap-to-hide-one-sprite-and-reveal-another; and pull-tabs and wheels have been translated to sliders.

These simple, repeatable animations can be purely mechanical or can be used to express profound meaning. The slider in e-picturebooks has been frequently used to simply raise a curtain in a scene, as in the e-picturebook of Sandra Boynton’s Moo Baa La La La [18]. The slider has also been used in the e-picturebook of The Heart and the Bottle [20], by Oliver Jeffers, but in concert with the other modes on the same screen to convey narrative.

“In a picture book, both the text and the illustration sequence would be incomplete without the other. They have a synergistic relationship in which the total effect depends not only on the union of the text and illustrations but also on the perceived interactions or transactions between these two parts.” [14]

In The Heart and the Bottle, a girl and her father have a rich and playful relationship in which they enjoy exploring the wonders of the world together: they take walks in the snow, look at the constellations, go to the seaside, and together read books on every imaginable subject. When the father suddenly dies, the girl puts her heart in a bottle: in other words, she refuses to grieve. But she discovers as she grows older, that by not allowing herself to have sad feelings, all her happy memories and curiosity about the world are suppressed as well. The slider in this e-picturebook is used to drag the girl up and down a growth chart. The animation shows her getting taller and older (and young again because the animation is reversible). Along with her change in size, the interaction animates the vanishing of memories and feelings of her happy childhood with her father.

The text says, “She was no longer filled with all the curiosities of the world and didn’t take much notice of anything...” The text doesn’t say she got older, nor that she forgot her father. That part of the narrative is carried by the replayable animation linked to a slider interaction, in a profound, multimodal use of animation in an e-picturebook. A replayable animation such as this example allows the child to look at the narrative many times and to consider it in light of the words and the words in light of the animation. The picturebook is a highly compressed narrative form that usually extends through 32 pages with 14 spreads dedicated to the story plus the paratextual elements (which may also be part of the narrative). In contrast, the length of an e-picturebook is theoretically limitless, but we feel the e-picturebook creator should consider striving for that same compression of meaning on each screen; making each image, word, sound, interaction, and animation carry or contribute to narrative to enable the same rich hermeneutic cycling through the modes that occurs in picturebooks.

In ensuring that a replayable, interactive animation enhances, contradicts and/or carries narrative (think of a relay race and the passing of the baton from runner to runner), a meaningful mode that engenders intellectual delight, enrichment, and understanding for the child reader is created.

It is so [27] is a poetic narrative about life and the unpredictability of death. This nonlinear story about a grandmother (who dies during the story), a pregnant mother and her little girl is told multimodally in words, images, sound, and interactive animations. A beautiful and gently humorous literary artwork, it presents an unorthodox, yet comforting view of what happens to those who die, where the ones who are born come from, and how those who remain in this world deal with the lost of some and the birth of others. The connections between modes are subtle
and require contemplation, as in any good picturebook. A funny and beautiful example of a child-controlled, meaningful animation is on the first screen of the story. The text says “Some have already gone”, and the illustration shows people and animals with little angel wings bobbing gently on the screen. When the reader touches each of these characters, it says goodbye in its own distinct voice, then travels up the screen until it disappear off the top. This simple interaction allows the reader to act as a benevolent god sending each of its beloved creatures on its way to the next realm.

Que Soltou o Pum? [19] is the story of a little boy and his troublemaker dog Pum (Pum means “fart” in English). While the humorous text talks about the problems of letting Pum run free (or punningly, the problems of farting in public) without ever mentioning Pum is a dog, the images show the animal creating mischief whenever it’s set free. The reader-controlled, repeatable animations allow the child to make a lot of mess with Pum. The fact that readers can control these movements and participate in the mischief is a source of great engagement and fun for children, who can replay each movement to their hearts’ content. Children enjoy being able to keep repeating the messes Pum makes, while the repetition conveys the meaning that Pum’s havoc is neverending. Repeating and reviewing is how children make sense of a story; and allows them to move confidently through the narrative while continuing to find new meanings as the story is re-experienced.

Parker Penguin [24] and Franklin Frog [23] are titles in Nosy Crows’ Rounds, a non-fiction e-picturebook series for children on the life cycles of various animals. Parker Penguin is about an emperor penguin: its habitat, environment, diet, predators, reproduction, and maturation are presented in a simple and charming story. The images, sounds and animations all carry information and meaning, and the simple text invites readers to try the animations, thereby interacting with the characters. The combination of modes here transforms what could be a boring chapter in a textbook into a deeply meaningful and pleasant experience for a child. When the reader helps Parker Penguin walk, swim, and experiment with flying, it is all part of the information the story is trying to convey. The fact that readers can start and control Parker’s movements make it even more meaningful because it puts them inside Antarctica’s environment and in the role of Parker as he slides over the ice or flees from predators. Other key passages where animation plays an important role are when Parker grows and his body changes and gets patches of yellow; and when the mother penguin regurgitates the food to feed baby Percy.

The interactive, replayable animations in Franklin Frog help the reader understand how a frog’s legs move when they help him jump and swim. Helping Franklin catch animated flies teaches how his tongue works. All the biologically accurate animations allow children to inhabit Franklin’s body as he develops from a little black tadpole into a grownup green frog, and make the life cycle of a frog into a story full of excitement and insight.

A new and exciting form of animation that the e-picturebook affords is the draggable background. Small children often want to know what is just beyond the edges of the screen of the television and will get close to the TV to try to peek in. This urge is satisfied in Nosy Crow’s retelling of Cinderella [22]. E-picturebook creator, Ed Bryan has divided the background into layers, so that when it is dragged by the reader, a parallax effect (or change in point of view) is created. This effect changes the relationship between the reader and the story, or the fictional world, deepening the sensation of immersion into the fantasy. This happens on many of Cinderella’s screens, but one of the most magical is set in the garden at night when the fairy godmother asks Cinderella to find a pumpkin to turn into a coach and rats to change into footmen. The reader is asked to help Cinderella and needs to drag the background to search for these objects. A fascinating video of Bryan’s creative process for this screen can be seen on the Nosy Crow youtube channel. [28]

One final example of an e-picturebook containing meaningful interactive animation is The King Has Goat Ears. This app is based on the codex book of the same name and is being created by Cynthia Nugent, one of the authors of this paper. Screen 11 shows a portrait of young Igor looking unhappy because he has to hold in a secret he has sworn never to reveal. The e-picturebook has added an old-fashioned pressure gauge to the codex illustration. As the reader drags the needle towards the danger zone of the gauge, Igor’s face gets redder and his eyes bulge. This revers-
Meaningful Animation in e-Picturebooks

Cynthia Nugent and Aline Frederico

5.2. Interactive Replayable Animation vs. Embedded Video

“One of the big differences between books and animation or film in general is that with books you can play with the idea that the viewer is moving at their own speed through the story, whereas with film you are controlling their time.” [7]

Numerous animated movies and TV shows have been repurposed as e-picturebooks. These often contain embedded video clips. Some useful examples are Disney’s Planes and The Jungle Book, which use the art from the animated films. The e-picturebook derived from an animated film is an uneasy hybrid. Text is created after the fact to turn it into a book, and word highlighting and narration added. As technically accomplished and beautiful as the parent films are, the e-picturebooks that spring from them are frequently nothing more than videos interspersed with games rather than multimodal e-picturebooks. The reading experience of cycling through the modes of words, pictures, sounds, interactions and animations on a single screen to arrive at the narrative is often missing. The active engagement of the reader is limited to a few games which are separated from the story, while most of the child’s experience with the story is one of watching rather than reading or being read to.

For the artist, it’s useful to know that embedded video sits as an impenetrable layer in the app—objects on other layers become inaccessible for interaction. Interaction screens are generally placed before or before or after the video plays. The Fantastic Flying Books of Mr. Morris Lessmore, is a fascinating mixture of interactive sprite animation and embedded video seamlessly knit together.

Animations that are draggable, reversible, and tappable are usually made from sprites, an animation technique from video games. These are a numbered sequence of transparent .png files that can be loaded into a coded program for the creation of an e-picturebook, or a drag-and-drop e-picturebook-authoring software like Robot Storybuilder. Most established publishers such as Nosy Crow and Oceanhouse Media have their own proprietary engines with which to create their e-picturebooks.

Unlike an animated movie that uses 24–30 frames/second, an animated effect in an app can be achieved with as few as 8–12 frames per second. When such a small number of frames is needed, it’s often easier to create the animation as a series of layers in a software like Photoshop. Make one layer for each frame, then export the individual layers as pngs. A useful tutorial on how to create and export layers as transparent numbered pngs in Photoshop can be found on the Robot youtube channel. [29]

6. Conclusion

As we have seen, animation has long played an important and meaningful role in the multimodal meaning-making process in picturebooks. In the “traditional” codex picturebook the animation is suggested through the illustration’s composition and the movement of readers’ eyes through the elements of the spread. In pop-up books animation is present through the physical interaction between reader and artefact, complementing the already multimodal picturebook. In the transition from codex to digital format, the gesture of touching the book to produce animation gained a new perspective. The electronic picturebook has become a space of encounter between the animated movie and the picturebook, but, as discussed, depending on the point of departure, the results can be superficial. In the multimodal reading process of a picturebook, interactive replayable animation allows the reader to make sense of the story on his or her own terms and pace. It also allows the reader to embody the experience of the characters as if they were living the story themselves. The enhancements animation generates in the picturebook reading experience are very meaningful and significantly change the relationship between readers and literary fiction.

We hope our discussion will help authors, illustrators, animators, publishers and scholars to make more informed decisions when producing and discussing picturebooks in both codex and electronic formats. Future research could address the connections between e-picturebooks and videogames, go deeper into the technical aspects of producing all the different kinds of anima-
tions used in e-picturebooks today, or investigate the role of the animator in the authoring process of an e-picturebook.

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Videos
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Abstract

For Illustrators the old question of digital or analogue has long now passed, as has the purely commercial practice side of illustration – These days all illustrator’s self-generate/ self-author work to actively develop and sustain a professional practice beyond solely servicing the needs of the client.

It can also be argued that the separation between illustration and animation no longer exists - In the digital age Illustrators are increasingly being asked to provide moving image content as part of a much broader hybrid illustration practice, and with the gradual move towards the online for newspapers and magazines, publishers will increasingly demand moving image content that begins to react to articles and stories.

Marshall Arisman, Chair of the MFA Illustration as Visual Essay Department at the School of Visual Arts in New York has said that all students should be learning technology for developing new authorial work - especially animation.

This paper seeks to identify one of the new areas for illustration – that of documentary animation/moving image. I refer to both, as it seems pertinent not to simply call it animation, since though it may take the form of animation, it is existing within the new short film format suitable for online platforms. Already within the fashion area we see a proliferation of this short film form with animations such as those created by Quentin Jones for fashion brands trying to retain the ‘dwell time’ for online shops. The paper will set out to explore the new narrative forms offered by the space between illustration and moving image – From the hypnotic looped narratives of GIF animations to the new 4 min-

Keywords
Documentary Moving; Image/Animation; Hybrid Practice; Data Visualization; looped Narratives; Collaboration; Research/Commercial Activity

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utes short film format allowing direct to an internet audience, and the potential of interactivity within digital media.

The paper will draw from both academic research and commercial references to help present future opportunities for illustrators.

The ever popularity of Zine Festivals, low-fi self-publishing, print production... has become very vibrant with events such as Pick Me Up Contemporary Graphic Arts Festival, Somerset House London, drawing in large audiences. Never before has it been so easy to publish and put your work out there, but I would like to suggest that rather than some low-fi parochial cottage industry, the real possibilities are within digital publishing. It is there with the advent of digital platforms that the real developments of narrative offer themselves to the illustrator. Whilst not denying the potential within print, there is a concern that it becomes too much of an aesthetic, a self-reverential look rather than as an outcome – an analogue counterpoint to the anxiety of the digital. Similar to a certain amount of letterpress work that feels that it could have been produced a hundred years ago without referencing the now. As journalist Paul Morley pointed out, with the anxiety of an unknown digital future maybe society seeks the comfort of analogue?

This paper is an exploration of some of the potential forms now available for Illustrators to occupy and how as a practice Illustration is embracing multiple mediums beyond merely the pictorial. Whilst a single illustration can contain a pictorial narrative, there are now emergent narrative forms beyond this, mimicking the complicated layering and reference points in modern life.

The critic Tom Lubbock writing when presenting the Critic’s Award for AOI Images 29 contentiously referred to Illustrations avoidance of influence from contemporary art, but I would suggest that with the digital & economic events of recent times, the discipline will need to embrace diversity or risk isolating itself in some folk inspired aesthetic.

As Tom Lubbock explained, ‘I half suspect that illustration has become a haven for visual artists who want to escape from what fine art has become. But whatever its limitations as art, this work is a source of strength that illustration should not neglect’ Indeed part of the argument that Lawrence Zeegen, Dean of Design LCC Professor of Illustration UAL put in the Creative Review article ‘Where is the content? Where is the comment?’ http://www.creativereview.co.uk/cr-blog/2012/february/where-is-the-content

One of the points raised was the need for illustrators to take
the next step from graphic art fairs, from selling product to discovering new forms of partnerships, collectives to help bridge the gap with design practices operating on greater scale. Whilst graphic artists such as Javier Mariscal run their own studios and have become a brand, there are few exemplars of illustrators going beyond the sole practitioner. Push Pin Studio and more recent collectives such as Peepshow are examples of how collaboration can further the ambitions of illustration, but there is perhaps a future in an age of inter-disciplinary work that illustrators will collaborate with furniture designers etc – to go beyond the realm of the 2D?

As contemporary art explores ever more sophisticated narrative forms across inter-disciplinary platforms we see illustration also developing beyond the 2D. Not only incorporating character designs or toys, but also within sculpture and ceramics, to installation spaces incorporating combined 2D elements with those of objects, and moving imagery, to a curated space styled by the illustrator, that is experienced? Illustration cannot help be effected by the greater awareness, or consumption of visual culture now.

I suggest that the Internet has made illustrators much more conscious of contemporary art practice, and with art schools adapting to reduced economic climate maybe illustration as a subject is drawing a much broader range of students?

In a recent article in Frieze magazine various artists & writers explored how future stories will be told -

'Narrative itself is a kind of user experience design for organizing the look and feel of reality'. Ian Cheng

Another observation from Timotheus Vermeulen indicated the need for stories, narratives to make sense of technological advances in society.

'I agree that narrative is our intuitive technology for making sense of change.'

Narrative therefore can be argued is essential to making sense of the world, and Illustrators inherent skill in telling stories are in a prime position to tell these stories.

Whilst documentary illustration isn't a new phenomenon, today there are many more new outlets for such material, alongside small scale publishers there are also a diverse range of digital platforms opening up, providing opportunities for illustrators to engage with narratives and socially aware content.

The Dickens Dark London app produced by the Museum of London uses Illustrator David Folvari to create an interactive graphic novel. The app once downloaded allows the user to navigate modern locations in London whilst viewing an 1862 map of London, with narration, and animated episodes of the darker side of Dickens underworld. Marrying perfectly the darker edge of Folvari’s drawings with Dickens’ descriptions of the underbelly of London life, and narrated by actor Mark Strong, the collaboration strikes the right tone.

This new tablet technology, here created by ‘Brothers and Sisters’, is portent to a whole area of potential reportage use for illustration adding to the users experience of a location or literature. Without necessarily being complete animation, the possibility for time-based illustration that reports, documents, or narrates has huge potential. Such apps can add the stories of such locations, triggered to aid the experience of a place, at a time when smart phones are commonplace and a vital tool in how we navigate cities.

Journalism is changing – The age of commentary in which we can all pass comment. At a time when digital travel guides will store up more personal knowledge/experience of places we are in a much more connected as a society. In a time when we can campaign and have the means to self publish at our fingertips. As more and more newspapers & magazines’ emphasis becomes online, illustration has to look at what potential spaces this offers, rather than nostalgically holding onto print as the one source for the industry. In the age of the hybrid practitioner the ease at which work can become part of a 20 second moving image piece suggests much for the storyteller within the illustrator?

As you scroll down pages they are already populated by moving image content, from playful GIFs to 20second advertisements. The rise of the GIF format may portent on how other digital formats, technology will be re-discovered, become popular (the GIF format has been around since the 1980’s). These hypnotic loops, work so profoundly because of that middle distance that they occupy – somewhere between the static image & the moving. This duality can be highly effective at furthering the text – adding atmosphere & suggestion to the article or story. The ease at which
they can be produced within Photoshop helps make GIFs economical in an age when illustration budgets haven’t increased, and are simply/directly expressive form.

“It’s a uniquely emotional format... I think it’s one of the reasons they are so popular. They’re like condensed emoticons” said Jesser Shapins at developers Zeega.

“We have become a nation of GIFs’ said Justin Ellis of the New York Times, a newspaper that is exploring the full potential of interactivity in illustration within the online platform. The playfulness of work produced by Christoph Niemann in his column Abstract Sunday exemplars the new spaces opening up through technology. http://niemann.blogs.nytimes.com/

I first became aware of this collaboration with software developers during the 2012 London Olympics when Christoph did a daily commentary on the games. Instead of reportage we had a series of interactive games that playfully explored ideas around the event rather than self-consciously depicting scenes of the games. Going beyond the aesthetic quality of the illustrations themselves there is an obvious translation of ideas & narratives possible with the move to the online platform for images.

Many of the visual assays that made up the column tap into the current zeitgeist for commentary within social media. This liberation takes a step further through interactivity, allowing readers to engage directly with the work. There is huge potential for developers to collaborate with illustrators, adding mood and atmosphere to the look of pages, or allowing the reader a sense of interaction with the article. In the New York Times Magazine article ‘Just One More Game...’ by Sam Anderson, of April 4 2012 the subject of the piece comes alive as the article comes alive as an interactive game of Angry Birds.

The Internet has meant that we occupy many varying time regimes simultaneously – We consume the news instantaneously, but also discover it outside of the instant – Watching amateur footage as if there, ourselves after the fact. This means that the linear scroll has been replaced with one of hyperlinks and jumps within the narrative timeframe.

Christoph Neimann’s presentation at the AGI Open conference, the Barbican, in London 27 September 2013, a moving tribute to the writer and illustrator Maurice Sendak, was sentimental and heart rending, and yet used technology in the telling of the story. Edited to a radio interview the piece had an animatic quality, combining still images with moments of movement. The seamless interplay between the static and moving image, mimicked how we engage sites in the online environment - reading text interspersed with pictures and looping animated images, with simplicity and unconscious immediacy. For children’s books there is a natural progression towards movement - An in between space not fully animated, but developing a character through motion or sound.

Collaborations to enable the development of Apps for iPhones, iPads, and Android devices with touch screens allowing the audience to interpret their own narratives. Petting Zoo by Christoph Neimann enables the simple drawings to react to your touch.
http://www.newyorker.com/online/blogs/culture/2013/03/christoph-neimann-petting-zoo-app.html

Whilst Marion Deuchars website for the book ‘Let’s Make Some Great Art’ features interactivity in the form of allowing the audience draw for themselves from a range of given tools.
http://www.letsmakesomegreatart.com/activities

The ability to interact with technology will become instinctive. Not as an alternative to the bespoke printed page, but the technology in which we read stories is changing fast, and the marketing of books will need to use the technological language of the everyday which now means touch screens. As more work migrates to the online, a greater understanding of its qualities will be essential for illustrators.

In tandem within the fashion area the proliferation of online editions of magazines and labels incorporating retail platforms, the need to instill dwell time is leading to multiple windows running short form films and animation. Greg Burne as director of creative agency Big Active has said that in the search for the next ‘big thing’ in illustration it is this area, of the short film form that has huge potential since the advent of the digital within illustration. Artists such as Quentin Jones are producing short film pieces that create unique worlds for fashion labels to exploit and hold the
shopper’s attention when they are only a click away from exiting the site. In the online the average length of advertisements are within 20 seconds. Even then it can feel an eternity whilst waiting for the next installment or episode. Narratives within the short film form will need to develop to hold attention spans. Quentin conveys attitude and visual playfulness existing in this gap between the still image and film format. http://www.quentinjones.info/

At the other spectrum you have interactive story telling referencing the visual language/vernacular of computer games. Offering a non-linear narrative determined by the viewer clicking on the various icons, figures within the picture plane. Artists such as Donna Leishman are exploring innovative ways to effect story-telling within the Internet environment. Works such as ‘RedRidingHood’ and ‘Deviant: The Possession of Christian Shaw’ allow the viewer, in the same ways that games exist, to discover their own path through a narrative akin to reading text populated with hyperlinks opening up different spaces within the story. http://www.6amhoover.com/index_flash.html

The games industry is rapidly becoming the largest area of growth within visual image-makers, as an industry it is now rivaling, if not already superseding Hollywood. These complicated worlds inhabited by the ‘player’ allows for total immersion into the constructed narratives. As technology and processing power rapidly develops games are evolving that induce emotional responses beyond suspense or ‘basic shoot them up’ appeal, and actively encouraging empathy with events, characters onscreen. Once again there is the interactive element within the imaged world that the player participates in, assuming avatars, and questioning notions of the virtual with the real. Many of the newer emotionally driven games are those in which the ‘player’ experiences situations, or lives rather than resolving a plot, such as the game ‘Gone Home’ in which the player visits a deserted home, trying to piece together the life of the character you inhabit. Blurring the boundaries between games and inhabiting virtual worlds, or stories, which have the appearance of filmic worlds. These transcend former connotations of video games and movies becoming imagined worlds close to reality. Obviously the element of chance, to choose different paths, to explore these worlds is enabled by the digital, and together with our ever-sophisticated awareness of visual culture, media, and filmic language, much more complicated narrative forms will play.

It is in this area that illustrators need not be worried, but should lead the way forging new areas of work, accessing the many digital platforms alongside physical outlets. To not be led down a stylistic cul-de sac – The Internet has sped up the consumption of images. Mario Hugo of Creative Direction and Artist Management Agency from New York calculated that perhaps 5 years is the lifespan of a graduating illustrator these days – Forcing onto the agenda the need to diversify and develop a career beyond a ‘style’ within illustration.

Within education there is a need to acknowledge and question what are the tools needed to be an illustrator today – The skills, but also the intellectual and conceptual tools to inhabit the professional world.

At the University of Brighton we are increasingly attracting students wanting to cross disciplines and to collaborate with those in different areas. At other institutions short-lived initiatives such as Department 21, an experimental interdisciplinary workspace at the RCA suggest possible avenues for new collaborative practices. Department 21 was a student led initiative attempting to break down the segregation of departments opening up opportunities for dialogue and collaboration between students from across the RCA. Whilst lasting only for a short time, students continue to seek such opportunities to engage beyond their discipline and to evolve polymath practices.

Perhaps a sign of students unburdened by any self-consciousness of the historical legacy of illustration? The Internet has indeed opened the world beyond the recognition or popularity of illustration itself to offering up wider possibilities of how stories or narratives can operate.

Not only the phenomena of increasing numbers studying illustration rather than seeing it as a vocational subject, but also reflective of a generation of educators themselves schooled in the wider connotations of ‘visual communications’ rather than the narrower, specialized illustration pathway? In a world of uncertainty, in which economic and political structures are in question, perhaps the need to make sense of the world, to seek a narrative
from it has become primary? In any event new forms of narrative interpretations are, a possible rich avenue for Illustrators to enquire and seek. Collaboration can only raise the ambition and scope of Illustration beyond the confines of sole practitioner to help tell new stories?

**FORBIDDEN FRUIT IN ANIMATION**
The Enigma of Sexual Taboo Expressed Through Cartoon Language

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**Abstract**
The article is uncovering the hidden subversiveness of animation, which is primarily meant for child entertainment. The research indicated that the definition of taboo in animation lays on undefined fundamentals of comparison between comic exaggeration of animated media and the realm of mainstream film. What might be understood as art, or better ‘erotic’ and what is ‘pornographic’ is down to an individual’s judgement similarly as public decision about what is offensive and entertaining. It is very important for us, authors of animation, to be conscious about the contents we are providing to the public eye. Although some might complain that we have lost many great products of animated media due to unnecessary self-censorship and sometimes-ridiculous requirements of censors (Disney’s covering of cow udders for example), after the collapse of strict censorship bodies many producers came into conflict with the public. Despite expectations that an increase in the amount and subversion of erotic cartoons will continue in the future, the complete abandonment of some sort of public regulation is practically impossible.

**Keywords**
Subversive animation, sexual taboo, scopophilia, censorship, adult animation, production code, uncensored animation, animated pornography, virtual pornography

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1. Defining sexual taboo in animation

‘What is peculiar to modern societies is not that they consigned sex to a shadow existence, but that they dedicated themselves to speaking of it ad infinitum, while exploiting it as the secret.’ (Foucault, 1978, p. 35)

Two main aspects of life hovering on a thin membrane between culture and an individual’s identity are sexuality and mortality, which appear to be also two basic aspects associated with cultural taboo and prohibition (Fig. 1). ‘The ritualised rhetoric of taboo surrounds the prohibition in such a way that these areas as social constructs are hidden from view as “given by a God”, and thus create the sense of anxiety and even mystery.’ (Aaron, 1999, p. 189)

The main task of taboos is to protect the cultural integrity and individual from repressed aggressive sexual desires, which are sublimated into the subconscious throughout the process of socialisation. To fit into a pattern of a particular culture means to sublimate aspects of desire that do not conform to the dominant norms of gender and sexuality in that culture. Taboos achieve that indecent exposure of sublimated sexual desires resolves in personal embarrassment (Fig. 2), but as these desires are sexual they also carry a sense of excitement when on a move. This excitement of suppressed desires stimulates the erotic imagination. This theory helps to explain the origins and connections between voyeuristic desire and the cinema.

The magic of the Hollywood style at its best (and of all the cinema which fell within its sphere of influence) arose, not exclusively, but in one important aspect, from its skilled and satisfying manipulation of visual pleasure.

Unchallenged, mainstream film coded the erotic into the language of the dominant patriarchal order. In the highly developed Hollywood cinema it was only through these codes that the alienated subject, torn in his imaginary memory by a sense of loss, by the terror of potential lack in fantasy, came near to finding a glimpse of satisfaction: through its formal beauty and its play on his own formative obsessions (Fig. 3) (Mulvey, 1975, p. 748)

Cinema attracts the curious gaze of the viewer serving as a mirror for his/her narcissistic confirmation and as a field for subconscious inhabitation of sexual desires. This further evolves into scopophilia (a pleasure of watching) which has direct sexual inclination (see Appendix B). Scopophilic and narcissistic aspects are opposing when it comes to pleasing viewers sexual desires through watching. While the first one uses another person (film character in our case) as an object of inhabitation of the viewer’s sexual desires, the second one with its introvert identification helps with the constitution of ego. ‘First one promotes separation of the erotic identity of the subject from the object on the screen (active scopophilia), the other demands identification of the ego through the spectator’s fascination with and recognition of his like.’ (Mulvey 1975, p. 750). Through the years, cinema has developed a parallel reality fulfilling the voyeuristic appetites of viewers, serving as a playground of erotic fantasy, a pleasurable escape from the otherwise heavily restricted world of reality, or as Sporn admits: ‘I’ve been convinced that most cinemagoers are simply
voyeurs, craving simple stimulation of their primate visual senses in the form of close-up views of beautiful people courting and mating, and gory violence. Things our inner primates think about constantly but seldom get to see. Animation is more abstract and cerebral, visually.’ (Sporn, 2008, www.michaelspornanimation.com)

Searching for an explanation of how sexual issues are addressed in animation, one might soon find out that the mainstream film theory mainly avoided it. Possibly because animation retains the stigma of being an innocent media presumably intended for children.

In comparison to live action film, animation with its distinctive language of comic exaggeration can afford to show things that would be completely inappropriate in mainstream live-action ‘adult’ film, such as: nudity depicting genitalia, sexual acts, marginalised codes of sexual conduct (transvestism, homo-eroticism...) and cross-species coupling. Somehow, graphic or three-dimensional expression in the animated film disguises the apparent explicitness of this imagery and could even help to dilute its impact. This can be profoundly liberating for animators, but in other ways it properly acknowledges the capacity of the medium to address such issues and to find new ways of expressing a view about them. Animation employs satirical mechanisms of caricature to exaggerate certain physical traits of the body (Fig. 4) in order to blur and challenge the traditional notions of gender, species and so - sexual identity.

‘It is here that any discussion of representation properly begins, because animation is unique in its address of the body and, as such, in its creation of the codes and conditions by which masculinity and femininity may be defined, and by which questions concerning sexuality may be advanced.’ (Wells, 1998, p.188) It seems that hardly any subject is absolutely taboo when expressed in comedy and also that there are no limitations of the mode of comic expression. The reception of a comedy is also a completely relative thing, dependent on many factors, from being in a suitable mood to being in the right company.

‘Comic exaggeration in animation, in this respect, is sometimes particularly effective in drawing attention both to a taboo issue and the animated form’s unique vocabulary in Illustrating it. Whether this amounts to “bad taste”, however, still remains contestable.’ (Wells, 1998, p.175)

2. Denying and forcing taboo
2.1. The power of subversion – pornography versus eroticism in animation

Presumably the difference between eroticism and pornography in animation, probably as it does in other forms, relies on several factors. First, the intention of the maker; second, the context in which it is produced and for what market/audience; and third, the relative perception of the spectator.

Reading the artifice of animation as a vehicle for sexualised imagery, one might argue, that the self-conscious illusionism of animation either dilutes the potentially pornographic by virtue that it does not include real people in the execution of sex acts, or exaggerates it by amplifying the explicitness in some ways. Both can result in sexually oriented material becoming comic or highly sensual - at one end Crapston Villas (claymation series on Channel 4, 1995-1997, Fig. 6), at the other all manner of ‘hentai’ (Japanese cartoon hardcore). The pornographic in animation normally concentrates on the depiction of sex acts for the pure sake of arousal of sexual pleasure; the erotic normally has a wider implication and meaning, but this is highly relative.

‘I vividly recall Barry Purves, the stop motion animator telling me that he had received a letter from someone who had masturbated to his film Screenplay - the erotic, sexual, sensual etc can be a complicated thing (Fig. 7)!!’ (Wells, 2009, email interview) The issue of 3D stop motion or CGI (computer generated imagery)
maybe related to this. Some may find the three dimensionality of these forms related to a higher degree of ‘realism’ being suggested, but in essence, animation technique may not be especially relevant here. It is more about who is expressing what to whom, and for what purpose, and whatever approach is employed then a certain degree of authenticity or persuasiveness is required to achieve the eroticism, or pornographic intent.

3. Censorship versus taboo
3.1. The legislation of deviant topics in animation
Psychoanalyst belief that cinema helps to fulfil subconscious desires of voyeuristic pleasures paradoxically denotes as soon as we realise that it also reflects the acceptable codes back on to us. Once we deepen into a comfortable world of fantasy, it is hard to believe that this world is not our own, but a smartly built construction dictated by the relations of media and political power, which might just reinforce on the codes rooted in the Victorian age. Our desire to see these Disney imposed heterosexual couplings stem from a system of beliefs and are not, as we often believe, necessarily the truth.

‘The obligation to confess is now relayed through so many different points, is so deeply ingrained in us, that we no longer perceive it as the effect of a power that constrains us.’ (Robinson, 2001, mag.awn.com)

What is the difference between censorship and taboo then; is it the very same thing, being simply renamed or is it a brand new phenomenon, echoing the Zeitgeist of the 20th century’s social, political and technological progression? Although both appear to be based on the same principles, taboo seems to be a part of the world of unwritten and so forth, unspoken law. It seems to coincide with humanist mentality, which granted an advantage to rational above emotional. Anything that did not fit the rationalist pattern was “understood as “residuum” or better as a “special mode of responding and self”” (Sadl, 1999, p.136) and as such did not deserve scientific treatment nor a word.

When, in the beginning of the 20th century, Freud ‘discovered’ subconscious, this mentality needed a configuration. The subject of the self-conscious was, for the first time, given a right to speak out about his/her libidinal frustrations. As more people spoke about the matter, the more they realised what a powerful if not even devastating impact it could have, so they felt the need for restricting it with a written law. Thus censorship was born. But as one of the modern subjects biggest distinctions is a ‘doubt’, the issues of its manipulative power are always in question. So we could claim that taboos still exist, what is changing is the social acceptance of them.

3.2. Pre censorship cartoons- silent era
Some of the early cinematic devices like mutoscope (see Appendix C), which consequentially became connected with ‘adult’ material, soon sparked public concerns (Fig. 8). Slowly with the popularisation of cinematographs, those issues became even bigger and public objections to some of the indecent films made at the turn of 19th century consequentially led to the enforcement of the motion picture production code. Although the first film censorship boards were founded in the USA several years before there was an animation industry (1907), it did not touch it for quite some time. The ‘pre- code’ time was a period of enormous experimentation and growth of both features and cartoons.

Most early cartoons (1915-1920) were based on newspaper comic strips, which were merely family orientated, this is why cartoons from 1920s have been mainly mild in showing sexual relationships or at least they expressed them in odd symbolic ways. Otto Messmer’s Felix the Cat (1927) showed a love interest from time to time, he rarely got to hold his wife’s hands or kiss her. In Paul Terry’s Little Nell (1920) a lascivious male eats raw oysters to suggest his intentions with the kidnapped lady. Even
Disney, loved female animals having trouble with their underpants (Minnie used pants for a parachute in Plane Crazy, 1928) and gags about animal udders (Mickey poking mother pig’s teats in Steamboat Willie, 1928). Mickey indeed came across as a rather nasty character in the early film that included vulgar and violent gags (in Plane Crazy he kisses frightened and harassed Minnie on the lips - Fig. 9).

Although sometimes the outrageous private lives of animators were hidden behind a curtain of public belief that cartoons are innocent child entertainment, once in a while they were slightly adult in their humour. ‘There was one short made that proved the wholesomeness of cartoons of the 1920s were not simply the products of innocent artists who were incapable of getting wild.’ (Cohen, 1997, p.12) In 1928, an anonymous group of artists made Eveready Harton in Buried Treasure (Fig. 10), an outrageous pornographic cartoon. It is full of unusual gags as the title character tries to have sex with a woman, a man, a donkey and a cow. The film is explicit and crude, but it is creative and funny, well animated, and so far removed from us in time, that today most people find it entertaining. Copyright at that time was not developed, so the cartoon was widely circulated and populated and ended up being shown in several cinemas and theatres across the States.

From about 1930 to 1934 it was possible to hear cartoon characters uttering profanity, spitting and making obscene gestures. Sexual references were found in a lot of cartoons, while alcohol and drugs were mentioned in a few shorts. There were even a few gags that referred to homosexuality, bondage and bestiality.

### 3.3. Betty Boop, the first animated sex symbol

The innocence of pre-code creativity is reflected in Fleischer’s early classic Betty Boop (Paramount Pictures). While Disney concentrated mainly on child audiences, his competition counted on adult publicity. Betty Boop, was a sexy tease who often found herself in compromising situations. Some of Miss Boop’s films feature lascivious males who ogle her and even touch forbidden parts of her anatomy.

Coinciding pin-up girl and Hollywood diva fashion, Betty Boop is known as the first and one of the most famous sex symbols on the animated screen (Fig. 11). She was a symbol of the depression era, a reminder of the more carefree days. Her popularity was drawn largely from adult audiences and the cartoons, while seemingly surrealistic (Fig. 13), contained many sexual elements. She was the first one to represent an actual sexual woman subject, while other female cartoon characters of the same period were not fully defined in a woman’s form, they were merely clones of their male co-stars (Minnie Mouse).

Pre-code Betty cartoons contained a variety of gags and images that would eventually become taboo when strict censorship was established. Animator Shamus Culhane loved to tell how he pushed Betty to the limits of acceptable taste in 1932; ‘I drew Betty Boop Bamboo Isle (Fig.12) topless dancing doing a hula hula with...’
her top garnished with flowers. Paramount’s office almost had a convulsion seeing it, and so did the Fleischer’s.’ (Cohen, 1997, p.17) When asked about the origin of the blatant sexual humour in these cartoons, Culhane admitted that it reflected the lives of many single, young men who worked at the studio. They were drinking and several liked to spend their weekends playing bridge with prostitutes who acted as their friends and lovers.

3.4. The effects of censorship on animation studios

Enforcement of the code in the 1930s has affected every animation studio to some extent. At the Fleischer Studios, the biggest changes occurred in Betty Boop cartoons. Before the code was enforced, she wore a low-cut top revealing her cleavage and a short dress exposing her garter. The code changed her into an uninteresting demure woman wearing long dresses that hide her sexuality. She eventually became a secondary character as the action in ‘her’ films evolved around a cute dog, named Pudgy. Betty Boop’s early cartoons were wonderful, surreal fantasies, in which anything could happen (space travel, meeting dinosaurs).

The code changed her into a rational adult, which destroyed most of her charm and her ability to venture very far from realistic depiction of the world. One reason that Fleischers began cutting back on surreal sequences is that the studio was trying to compete with Disney rather than sticking with what they did best. Most likely ‘if the code had not changed Betty, the studio trend towards cute, realistic art would have done so eventually.’ (Cohen, 1997, p. 23) Her popularity decreased and by the end of 30s the production of series came to an end.

When visiting the British Board for Film Classifications (see Appendix D) website it seems that the only Betty’s cartoon that was rejected for probably inappropriate sexual misbehaviour, is Betty Boop’s Big Boss (1933), where Betty takes a secretarial job and the boss sexually harasses her; but not without some encouragement from herself of course (Fig. 14). The reason why she is so widely popular is probably the fact that her cartoons allow different discourses of reading. While sexy underage coquette to adult audiences, Betty probably meant just a cute doll with a dog companion to children. This is probably why, despite her decline in the 1930s, Betty with the help of television repetitions kept the status of an iconic symbol that survived until the mid 1980s when she experienced a merely successful merchandise renewal in colour. Her most notable reappearance (Fig. 15,16) happened in Who Framed Roger Rabbit (1993).

Old taboos were brought into further questioning in 2004 with the introduction of the Drawn Together series (first animated adult reality show), where one of the characters, Toot Braunstein, strongly resembles Betty. Just that this time she completely detonates her iconic status as an overweight sex symbol from the 1920s, who demands to be the centre of attention, cuts herself with razor blades when depressed, and often initiates conflict in the house (Fig. 17, 18).

F. 14 Betty Boop in Big Boss (1933).


3.5. Red hot riding hood and bestiality

‘Whosoever lieth with a beast shall surely be put to death.’ (Exodus 22:19, www.jesus-is-savior.com)

Created by Preston Blair in 1943, under direction of Tex Avery, Red Hot successes Betty Boop’s sexual symbolism and even pushes the limits of acceptable in terms of exaggerating form, animation itself and storyline further. Despite the fact that Avery liked to believe that at Warner Brothers they: ‘... had so much liberty over there, and I think it showed in our cartoons. Nothing was held back: we had hardly any censorship problems.’ (Cohen, 1997, p.37) film’s sexual controversy provoked censorship clash. Illustration Wolfie goes mad in his lascivious takes when watching Red’s performance.

In Preston Blair’s version of the story the completed film was shown to a censor and he, ‘who was a dirty minded striker’ (Cohen, 1997, p.38), thought the film was promoting bestiality between a woman and the wolf, especially the part where Red performs on a stage, making spectating ‘Wolfie’ go wild in his lascivious takes (Fig.19, 20). Blair was told to animate a new ending that showed the wolf tearing off his face (mask) to reveal there was a man underneath. Despite all the inconveniences, the additional footage was not used in the end, but censors achieved its ending being changed. He said that everybody except the censor saw the wolf as a simply- funny. Blair insists Avery never intended to suggest bestiality.

The film’s original conclusion, rejected for reasons of implied bestiality, included Grandma marrying the wolf at a shotgun wedding before the unhappy couple and their half-human half-wolf children attend Red’s show. The actual released ending shows Wolfie returning to a nightclub after escaping from Grandma and distressed due to his unsuccessful relationships with women, he commits a shotgun suicide. This seems surprisingly scandalous by today’s standards and would be usually edited on television broadcasts, but back then, despite war, cartoon violence was not as much the concern of the code as sexuality.

Despite all the problems with the production code (see Appendix E), Blair declared that Red Hot Riding Hood was their most profitable short. Apparently when screened in New Jersey the audience got so wild that they had to stop the film, rewind it and show it a few more times. In 1994, it was voted the seventh place in the 50 Greatest Cartoons of all time by members of the animation field. It is one of Avery’s most popular cartoons, inspiring several of his own sequels as well as influencing other cartoons and feature films for years afterward. Both, Jessica Rabbit (Who Framed Roger Rabbit) and Tina Carlyle (The Mask), resemble and imitate Red.

The history of bestiality portrayals in cartoon language can be tracked back to pre-code comedy Eveready Harton (1928) where the main character is having sex with a cow and a donkey and even noticed in unusual aspects of relationship between Betty Boop and her dog Bimbo. It seems it has not really been an issue until Tex Avery’s Red Hot Riding Hood, where it was censored. The years of experimentation following the change in social climate of the 1960s, audiences seem to become less sensitive for such topics and more fascinated by narrative (often driven by comedy routine) and technical achievement of animated medium. Nobody really brought up a question of bestiality when Disney released Who framed Roger Rabbit in 1988 (Jessica is married to the rabbit) and hardly any after the animated romance The Beauty and the Beast in 1991 (Fig. 21), both featuring interspecies coupling. Bestiality became a common laughing stock of adult ori-
entiated animation series such as Family Guy (Fig. 22), South Park and Drawn Together, which even features a character Captain Hero, who frequently shows traits of zoophilia.

3.6 A ‘pure’ Walt Disney
Stripped of the historical and social constructions that give it meaning, innocence in the Disney universe becomes atemporal, ahistorical, apolitical, and atheoretical space where children share a common bond free of the problems and conflicts of adult society. Disney markets this ideal, presenting itself as a corporate parent who safeguards this protective space for children by supplying the fantasies that nourish it. (Giroux, 2001, p.31)

To sustain his priority in child-orientated animation, Disney made sure that being censored would not disgrace his name. Unexpectedly he had minor censorship problems like for example with the Clarabell Cow short (1930), when some patrons in Ohio suddenly became offended by exposure of cow udders, claiming that she looked nude (Fig. 23). The problem was elegantly solved with the cow having to wear a skirt. Despite the fact that censors have not complained about any of his other characters, he started to practice self-censorship. Although nobody complained about Minnie being topless, her torso became solid black (like Mickey’s) instead of two white circles for breasts she had in early films. This affected the sense of her femininity and so gender identity.

3.7 Transvestism, gender issues and cross species coupling in cartoon language
‘...he (Mickey Mouse) exists in our common culture. He is the site for enactment of childhood wishes and fantasies, for early conceptualisations of the body, a being who can be imagined as both self and other.’ (Wells, 1998, p. 197-198)

The dominant tradition of representing gender in anthropomorphic cartoon characters is done through imitation and impersonation of the human traits. When male characters are defined by masculine traits and behaviour (cunning, aggressiveness), female mainly through feminine physiological characteristics using stereotypical mannerisms. ‘The depiction of sexuality is clearly a dominant methodology by which to locate gender but it is also the most destabilised and ambivalent arena of the representation in the animated cartoon.’ (Wells, 1998, p. 204) Fred Moore, the Disney animator, who drew Mickey and Minnie Mouse, defined the key differences between their designs: In order to make Minnie as feminine as possible, we should use everything in her make up to achieve this end. Her mouth could be smaller than Mickey’s and maybe never open so wide into a smile, take, expression etc. Her eyelids and eyelashes could help very much in keeping her feminine as well as the skirt swaying from the body on the different poses, displaying pants. Carrying the little finger in the extended position also helps (Wells, 1998, p. 204).

This shows that the female character design is actually based on the representation of the male character. Minnie is mainly
defined through the set of signifiers of femininity, skirts, panties, high-heeled shoes... which also function as additional signifiers of character from the male model. Although particular attention is drawn to genital difference through exposure of underwear, the biggest physical differentiation can be seen in the design of her face: beside eyelashes and eyelids, she has a smaller mouth that does not allow exaggerated expressions. The smaller mouth characterisation symbolises the idea of child-woman in animation, so the juvenilisation as feminine. Some authors argue that even some characters like Mickey have been not only juvenilised, to appeal to adult audiences as a childlike character, but even feminised, which shifts the gender position in the apparently masculine contexts of the cartoon. Gender and species become almost arbitrary constructions and performances, which constitute a number of transgressions and points of contradiction, from transvestism, homoerotic relations, to bestiality.

3.8. Tom and Jerry and gender issues

Watching Hanna- Barbera’s Tom and Jerry cartoons through the eyes of an adult often raises questions of Jerry’s femininity and furthermore the main character’s relationship. ‘The relationship of Tom and Jerry is very curious. It vacillates between hostility and friendship. The complicity of a latent love is carefully sustained by the ambiguity of Jerry’s sex. The game between them evolves from teasing to violence.’ (Wells, 1998, p.208)

Blurring the line of gender, Jerry through cross-dressing, occasionally gives an impression of taking on a feminine role, which complicates his relationship with Tom. Beside latent heterosexual love, this also brings up questions of homoeroticism and even the notions of cross species coupling. The most ambiguous example of these occurs in Baby Puss (1942). Jerry, who is hiding in a dollhouse, takes a bath behaving in a very feminine way and even sings with a high pitch voice. Once he notices peeping Tom at the window (Fig. 24), he covers his body as he was covering breasts and genitalia, turning his legs away as he screams in a shock, just before punching Tom on his nose, because of his voyeurism. Jerry here is clearly coded as a girl and also the intrusive lustful stare of Tom is emphasised. At this point it is clear that Jerry had transcended his assumed appearance as a male rodent and has turned to female, attractive to the ‘maleness’ of the cats through this highly feminised sexual ritual.

When the question of the subversive readings of Tom and Jerry cartoons was brought up in documentary about subversive animation (Cartoons Kick Ass, 2001) animation theorist Cohen expressed his disagreement with any intentional connections of Tom and Jerry with hetero or even homoerotic bonds. He and many others I questioned in the interviews agreed that all the subversion is in the ‘eye of the beholder’.

3.9. The end of production code - uncensored animation

There have been significant shifts in social attitudes, behaviours and institutional regulations surrounding sexuality since Freud opened the door to the bedroom. Sexuality throughout the 20th century has moved closer to the centre of public debate than ever before. One hundred years ago the idea of sexual politics would have been unthinkable (Sexuality and Modernity, www.isis.aust.com). But it was not until late the 1960s and early 1970s when mainly young people involved in the peace movement and coinciding counter cultures took the initiative for sexual liberation as an important part of their politics. The main outcome of the sexual revolution was the increase of commercialisation and commoditization of sexuality through pornography and mass media, followed by the simultaneous relaxation of censorship laws. After the closing down of Hays Office in 1968, Hollywood established a rating system whose job was to, through rating, alert the viewers about the presence of violence, vulgarity, sexuality or other forms of objectionable controversy expressed in films. New
policy did not prohibit the production of R (rejected) and X-rated features, but it also could not guarantee that these would get financial funding or distribution. The British Board of Film Censors re-branded into the British Board of Film Classification a bit later, in 1984 emphasising its role: 'classification plays a far larger part in the Board’s work than censorship.' (BBFC website, www.bbfc.co.uk)

Since these changes happened, there was a notable increase in production of animated features and shorts for mature audiences. Authors used different approaches, from showing the mundanity of street life, filled up with drugs, violence and sex (Bakshi’s Fritz the Cat, 1972) to playing out Disney’s family orientated policy with secretly inserting a few indecent jokes into Who Framed Roger Rabbit (1988). Some animated features, mainly from Japan, finally found access to Western markets, serving audiences with graphic violence and sexual imagery, never before imagined in Western animation. Another gainful sensation for audiences hungry for something more subversive, outrageous and eccentric were flaring up festivals where these films were granted a chance to be actually shown. Without censorship boards to advice them, many authors encountered problems due to public disapproval.

3.10. Homosexuality in cartoons

It is really difficult to trace discourses about homosexuality in the mainly heterosexually orientated Western animation theory. This probably echoes the actual social atmosphere, which views sexuality as ‘an issue of active importance primarily for a small, distinct, relatively fixed homosexual minority, and not needing to be considered by the “normal” heterosexual majority.’ (Griffin, 2004, p.106)

There are, surprisingly, several quite overt references to homosexuality in American cartoon history, for example, in Max Fleischer’s cartoon Any Rags (1932), where one of the rag seller’s male customers buys a nude statue of a male discus thrower and then happily leaves the scene. In the Mickey Mouse cartoon Shanghaied (1932) a group of pirates sings, ‘The Captain’s not a girl’ (Griffin, 2004, p.106) - including one sailor with a falsetto voice who bats his eyes. At the end of the Bugs Bunny cartoon What’s Cookin’, Doc? (1944), Bugs receives a rabbit-shaped Oscar, saying ‘I’ll even take youse ta bed wit me every night!’ The statue becomes alive, kisses Bugs on the mouth and asks ‘Do you really mean it?’ (Griffin, 2004, p. 106).

When Lenny Bruce first presented Thank You Mask Man (Fig. 25) to the public in 1968, it caused a public disagreement. In the cartoon, the Mask Man was a nice person who always helped people and he never accepted their thanks with a gift, but one day they manage to convince him, and on their big surprise, he asked for Tonto, an Indian guy and a horse so he can perform an ‘unnatural act’. (Cohen, 1997, p.78) The crowd is disgusted and calls him, ‘fag man’. The author wanted people to think about homophobia and other issues raised by this comic short. The message the film carries is so direct that even the homosexual minority condemned it as ‘fag bashing’ (Cohen, 1997, p.78) at the beginning and it took quite a while until it was understood as a revolt against homophobes and became a classic shown ion nearly every homosexual film festival.

One might expect that the sexual revolution and independent animation practices will destabilise the stigma of gay taboo today. But as we might find out through this research after all homosexuality still is not completely accepted as an equal practice to heterosexual coupling promoted and ingrained into our mentality via a hetero orientated commercial animation and so ‘queerness’ remains kept in a shadow of taboo. It seems that despite recently improved tolerance of mainstream animation companies (like Disney), it is actually heterosexual minority of audiences and certain conservative groups (see Appendix F) that still disagree with the showing of homosexuality. This confirms the outcome of
British Broadcasting Standards Council’s research about the portrayal of sex in broadcasting (1988). Most respondents expressed reservations, while the over 55s and parents with teenagers were strongly against the showing of homosexual characters on television. In the opposition most homosexual respondents spoke about their desire for equality of characterisation on television.

‘I think it is good to have programmes like we have been having on Channel 4 (Fig. 26, 27) and BBC but I think it would also be a good thing to have gay and lesbian characters in any sorts of programmes so that we are not seen as something very special ...Just as part of the furniture you know, no different.’ (Gay man, Hargrave, 1992, p.54)

3.11 . First successful x-rated animated feature

Ralph Bakshi was not always one of animation’s ‘condemned’. He started out doing theatrical child public orientated cartoon shorts and animation made for television. After leaving Paramount Pictures he co-produced Fritz The Cat, a feature based on an underground comic character.

‘I decided to use Fritz because I was bored doing kids stuff. Fritz was my chance to make the kind of a film that I envisioned adults would like, and it would be the antithesis of Disney animated feature.’ (Cartoons Kick Ass, 2001, TV documentary.

‘Fritz was to break a lot of new ground’ (Cohen, 1997, p.81) by being the first X-rated animated feature successfully released in the United States.

After dropping out of New York University, Fritz the Cat decides to live life to the fullest. For Fritz (beside all the rest of ‘experimentation’) that means sexual experimentation (sex with all kinds of animals, including group sex in a bathtub, Fig. 28,29). The feature is full of bare-breasted females of various species, strong language, cops with pig-heads and outrageous images of soft-core sex (no insertion shots). The film is a product of radical politics of the period. Bakshi’s depiction of Fritz’s life is colourful, funny, sexist, raw, violent and outrageous. Being X-rated had its own advantages and disadvantages. Attracting curious audiences to the cinemas, the film soon broke even and succeeded into a positive balance (see Appendix G), however, soon after its initial success it started to lose play dates due to its bad rating. Lots of cinemas refused to show X-rated features. It also encountered marketing problems as some newspapers had a policy of not running adverts for X-rated films. Yet another problem was to find a solid distribution.

The film soon showed the limitations of an ‘opened’ market and faced box office failure due to being shown to a society, that was not yet ready for it.

3.12 . Disney changing the policy of acceptable

For an experiment researching emotional responses to film (November 2008), subjects were shown several clips. One was from the film Who Framed Roger Rabbit, where it famously showed a cartoon character Jessica Rabbit seducing a live action character, detective Eddie Valiant (Fig. 30,31), uttering her unforgettable femme fatale statement ‘I’m not that bad, I’m just drawn that way.’ (Who Framed Roger Rabbit, 1988, film) Interestingly, no student showed the smallest objection to this highly sexually charged moment of an otherwise family orientated Disney Feature (PG rating). All, no matter what cultural origins, gender or age, seemed to be enchanted by its comic relief. This might partially prove the above mentioned findings of the Broadcasting Standards Council’s research about the portrayal of sex in broadcasting (1988) that the social climate became more acceptable for
sexual topics expressed in visual media like film and so in cartoon language. It seems that even Disney evaded its otherwise strictly child orientated policy by creating something welcomed by adults and children alike.

Marrying cartoons to film was a great marketing attempt to bridge the gap between different age groups of audiences. It also avoided censorship (i.e. bestiality) problems that the feature might suffer if entirely consisted of a live action footage. Despite a sexual undertone the feature achieved great success being shown in American and European cinemas without any censorship cuts. It all seemed nice and easy until the film’s laserdisc release in 1994. Some very conscious observers who moved through the disc frame by frame could find three naughty little touches that cinema audiences never noticed.

The biggest surprise in the film comes in the scene where Jessica Rabbit, is thrown out of a car as it crashes (Fig. 32). She spins around and for three or four frames her legs are apart and we can see up her dress. On the tape of the feature, all we see is a dark area, but on a laserdisc, some detail of a female anatomy can be seen. (see Appendix H) When the press found out about these frames, they did their own job to promote it. They also wondered who put the image there and how it had escaped notice. Disney refused to comment, but one of their animators said: “Secret naughty gags like those found in Roger Rabbit will probably not be possible in the future. People who go through films frame by frame are making too much of an issue out of these images. As a result the practice of adding unauthorized jokes and waiting to see if the ink-and-paint department removes them will probably come to an end.” (Unknown Disney Animator, Cohen 1997, p.112).

This directs us to a conclusion that there is still strong self-censorship present and ingrained into hidden desires of marketing policy. On the other hand, many retailers said that within minutes of the Laserdisc debut, their entire inventory was sold out. This run was fuelled by media reports about controversy, including stories on CNN and various newspapers. A Disney executive responded to Variety, that ‘people need to get a life than to notice stuff like that. We were never aware of it, it was just a stupid gimmick the animators pulled on us and we didn’t notice it. At the same time, people also need to develop a sense of humour with these things.’ (Fleming, 1994, www.variety.com)

Despite all the innuendo laserdisc brought, Jessica Rabbit kept the position of biggest animated sex symbol. She represents a compilation of Golden Age film divas and Vargas style pin-up girls, following and reinforcing the animated femme fatale heritage of Fleischer’s Betty and Avery’s Red Hot Riding Rood. With her seductive voice, tempting movement, ‘mock innocence and more curves than Daytona’ (Jessica Rabbit Biography, www.who2.com) she transgresses the fame of a random cartoon female becoming an impersonation of men’s sexual desires and women’s beauty ideal. She seems more authentic as an animated 2D character than she would be as a real person.

Lately there were several attempts to alter her two-dimensional form into a highly realistic computer generated character. Reading Jessica Rabbit Untooned (Fig. 33) blog comments, shows that from a vast amount of them (323!) there were only five that did not completely praise the authors attempt towards making Jessica look hyper-realistic. Even those who were mainly complaining about her odd looking disproportions commented that she still looks like a cartoon:

‘I’m not sure how it could be viewed as cartoon-ish still, since other than the odd proportions it looks pretty much like something you’d see in the pages of a magazine. Impressive.’ (Anony-
mous, Pixeloo blog, 2008, pixeloo.blogspot)

Most of the comments were based on the admiration of technical achievement (textures, lighting effects), but nobody really expressed a concern about how this could influence her status as a cartoon diva, an impersonation of femme fatale. One could argue that the higher the level of realistic expression, the lesser space is left for inhabitation of the viewer’s imagination. This provokes the question of relevance of such attempts. As argued in previous chapters, the special status of animation lays in its distinctive approach to a form and contents and changing that fact means altering its fundamental status.

3.13. Deconstructing the sexualized male gaze: feminist opposition to animated pinups

Lately several Internet forums have appeared comparing opinions about who is more ‘hot’ Betty or Jessica. It is actually hard to define the winner, but one thing is for sure, Jessica is more popular within today’s male animation fans.

The reason behind it is probably the fact that the perception of what is considered sexually attractive woman has changed through the decades. In the Golden Age popular, shy squeakiness and childish cuteness of Betty’s ‘innocent’ appeal does not really fit into what today’s men consider sexually attractive. Her impact seems to fade when appearing alongside irresistibly, alluring cartoon minx Jessica in Who Framed Roger Rabbit. Jessica resembles the consumerist culture of the late 80s, driven by semiotics of beauty ideal of celebrity top models. She is ‘sexy, sultry and suspect, proclaiming her innocence while overheating every male in sight.’ (Animated babes, www.who2.com) She inadvertently opened the door to tough animated heroines (Fig. 35) that have little sweet or innocent about them, like Aeon Flux (MTV’s Liquid Television, 1991), Tank Girl (1995) and most notably, Lara Croft (Tomb Raider 1996).

Many of these creations, often idealised and oversexed, have challenged stereotypes of how "good girls" should look and behave and have proved an important and useful catalyst affecting change in women’s battle for equal rights.’ (Garner, 2008, news.bbc.co.uk) Feminist animators probably would not agree with this perspective. Feminist production is targeted against representation of a female body as a passive implement of an actively signalised male gaze, using different (often intentionally sexualised) approaches to achieve its deconstruction.

Joanna Quinn’s Girls’ Night Out (1987), for example, tells the story of Beryl, an ordinary Welsh housewife, who ends up enjoying a striptease routine by a male stripper (Fig. 35). In comparison with posh animated divas of the big screen, she is an overweight, ordinary working class woman searching for some excitement in an otherwise dull life. The audience is invited to see the life from Beryl’s point of view, which is made explicit when the male stripper is made the obvious subject of the female gaze, ‘a reversal of the dominant orthodoxy of being the subject of the male gaze’ (Nelmes, 2003, p. 222) that characterises mainstream film.

‘The stripper’s bulging eyes (and Beryl’s eye-popping on her first view of the stripper, Fig. 36) make visual reference to Tex Avery’s character of the literal male wolf and the female object of his desire (Red Hot Riding Hood).’ (Pilling, 1997, p.50)

3.14. Postmodern approach to sexuality – pink komkommer

In 1990 an independent Canadian animation producer Marv Nevland initiated a very interesting project Pink Konkommer (Fig. 37), addressing both a taboo issue and animated form’s unique vocabulary in illustrating it. The film is a compilation of different sequences done by different animators, which could be understood as a fairly post-modern form of expression. As ‘pastitio’ of private erotic fantasies, film’s experimental nature reflects the increasing desires of post-industrial society towards open sexuality. The film is deliberately highlighting double standards of any viewers who criticise and object to certain kinds of artistic expression and yet carry on watching it.

The implicit suggestion being that they enjoy it, but denying its pleasures; pleasures which often emerge from the breaking of
taboos and questioning of moral boundaries. This may be best achieved through comedy and the imaginative use of animation, a brief which informs the basic premise of Pink Konkommer. (Wells, 1998, p.175)

The film aims is to show that all the attitudes towards sexuality and indeed morality are entirely personal and so very relative (it can be understood on many different levels, from pornographic to purely artistic). Its comic daring and its particular deployment of animation to Filtrate this relativity, suggests that perception and understanding is ‘all in the mind’. ‘The images appear to be funny and ambiguous, without the threatening feel of being censored. It is a proof that the strongest tool animation employs in wish for subversion is a- comedy.’ (Wells, 1998, p.178)

Interestingly, Nevland claims he had never had any censorship problems. Television stations across Europe have purchased the film and have shown it without cutting the footage, while, in his opinion, in the United States television stations simply would not buy such a film. This again brings a question of different cultural acceptance of taboo topics and freedom of expression in the modern era.

3.15 . Censorship towards the end of the century
Since 1999 the trend towards the relaxation of sexual censorship has progressed, which has also made hardcore pornography widely available to adult audiences through the R18 rating. Films with this rating are only legally available from licensed sex shops or may also be seen in specially licensed cinemas(see Appendix I). Finally the fans of adult animation have got the chance to feed their desires of sexual subversion with exclusively adult animation programmes, shown outside children’s watching time (after the ‘watershed’), intentionally pushing the boundaries of social taboo with portraying controversial topics, i.e. different paraphilias (see Appendix J), or visiting festivals featuring ‘deviant’ animation (Fig. 38, 39, 40) like Mike and Spike’s Sick and Twisted or FIAE (festival of erotic animation) in Brazil. Although The Simpson’s started as an adult show, allowing ‘reading’ on different levels (either as cute characters, doing funny stuff or as ambiguous naughty gags), it became widely popular among child and adult audiences. When getting to something that might be ‘questionable’, the producers at MTV or Nickelodeon usually simply avoid censorship with masking it with “more cartoony” look. They praise controversy as it helps to increase the viewing figures (Fig. 41, 42, 43, 44).

‘More controversial the better, we have enough money to pull out when being sued.’ (Jon Farrar, 2009, interview) The attitudes of public viewing to the depiction of sexual activity and the portrayal of sexuality in broadcasting is an area that would appear to have been little explored, even less in terms of animation. The Broadcasting Standards Council’s research (1992) of the portrayal of sex on television revealed a common attitude, that although the portrayal of violence and the use of bad language was the most concerning, the viewing of sexual material was the most often cited reason for turning the television off, regardless of the composition of the audience with whom one was watching. The respondents expressed, variously, embarrassment, offence,
or a desire to protect others, especially children. While younger respondents didn’t really object, most of older (50+) expressed a general belief that standards of broadcasting were becoming more liberal and depictions of sex more explicit. They were concerned about sudden or rapid change and feeling that this was not altogether desirable.

‘The borderline of decency is being pushed, and gradually a change of attitudes is being forced on society until it’s accepted as normal. That’s a problem, that’s a shame.’ (Male, 55+, Milwood - Hargrave, 1992, p.6)

In general, attitudes to what material is suitable for viewing by minors have changed over the years, and this is reflected by the reclassification of older films being re-released on video and by a high decline in films with censorship cuts needed in the last eight years (see Appendix K). Despite trends towards liberalisation there are still anti-censorship campaigners, like The Melon Framers for instance (website critical to BBFC), conservative press (like the Daily Mail), conservative religious and other groups concerned with family life expressing concern that the release of sexually explicit and violent films will corrupt the nation (see Appendix L). The BBFC also continues to demand cuts of any material that would be find contradictory with the law against obscenity, child or animal abuse.

Bill Drake (American Family Association): ‘The idea of animation is that it is childlike, innocent and very clean and when you find out it is not it is a terrible school.’ (Cartoons Kick Ass, 2001, TV documentary)

4 . ‘Toon porn’ and modern society

4.1 . The advent of 3d cgi and virtual sexuality

Following technological development at the shift of the centuries, the outbreak of new mass media platforms (Internet, mobile phones, video game consoles, virtual reality stimulators,...) opened new marketing possibilities for so called ‘toon porn’ (Bunker, 2004, www.msnbc.msn.com). With its loose censorship rules they represent an opponent to otherwise still heavily censored television.

The idea of completely computer-generated pornography emerged very early as one of the most obvious applications for 3D computer graphics. Until the late 90s, it was time consuming and costly to produce digitally manipulated pornography, but in the early 2000s modeling and animation software developed and the rendering capabilities of computers improved. One of the lately most popular 3D software applications called Poser (Fig. 45), gives users freedom in designing the desired appearance of their actors by using preset elements. It also allows the exploitation of computer-generated imagery to create settings and situations that probably would not be possible or legal in live action filming. The advantages of ‘Poser-porn’ are low production costs and avoidance of risks and criminal activity associated with real pornography.

Since the inception of the Internet, websites featuring cartoon pornography have grown concomitantly along with visitors (see Appendix M). The biggest adult web sites have at least one website with animated contents.

These are divided into three categories (Fig. 46):
- hentai, (sexually perverted or ‘abnormal’ in Japanese), sexually explicit version of manga style cartoons, often featuring underage schoolgirls in lurid situations.
- Westernised version of hentai, featuring familiar cartoon characters from popular animated TV-shows (The Simpsons,...)
- anatomically correct three-dimensional computer generated figures similar to some computer game genres (like Tomb Rider)

The trend is also crossing over to mainstream media, resulting
in increase of adult computer games and hentai films reaching Western market.

It might sound unbelievable that someone is sexually excited by cartoon, but as an anonymous web master believes, his customers are seeking for something they don’t get from ‘normal pornography’. ‘Imagination’, he answered when asked about the appeal of his work ‘There is no end to the situations and variations that can be explored, and no restrictions as to how far a fetish can be carried.’ (Brunker, 2004, www.msnbc.msn.com)

Besides serving as imagination stimulant with their fantastic imagery (Fig. 47), more and more websites seem to attract the viewers with rising quality of realist depictions. This might bring up some moral issues leading to future legal restrictions (see Appendix N). Cybersex expert claims:

Viewers can become inured to objectionable content, particularly if it is acted out by cartoons. Stuff that they would never have thought about doing or imagining is right there for the taking, so people do get on these sites where you have sex with children or corpses or people who’ve had limbs amputated ... What the cartoons do is make it even more OK because you can say it’s not humans (Brunker, 2004, www.msnbc.msn.com).

Furthermore J. Hughes, in his article ‘From Virtual Sex to No Sex?’ argues how will the phenomenon of the virtual project called Second Life (Fig. 48) influence the future of sex in reality. In his opinion the two most notable achievements in technological control of sex are both already occurring: first separating sex from physical contact, and then establishing our control over our sexual feelings.

‘Sex is already moving in a virtual direction, between widespread access to and use of porn, phone sex, video-interactive sex, sex in virtual worlds, and eventually teledildonics (see Appendix O) (Fig. 48) , the use of body suits and tactile equipment controlled from afar.’ (Hughes, 2007, ieet.org) Although the emergence of first such technology coincides with the beginnings of Internet, due to its deficiency it haven’t had a power to stimulate its users. Latest improvements aim to provide better experience, evolving into more accessible, user friendly platforms: ‘In about ten years however I am sure that Wii-sex will be quite popular.’ (Hughes, 2007, ieet.org)

The opinions are clashing. Some believe that virtual body sensation could even reinforce the experience in material reality, claiming:

Electronically mediated sex and porn are safer (no diseases or pregnancy), easier (lengthy courtship and foreplay are unnecessary), more convenient (available any time you want) and more likely to be exactly what you want (your partners can be anyone, or anything, you desire, without any physical defects. (Hughes, 2007, ieet.org)

For others virtual sex represents an obstacle in the future of human sexuality, causing a decrease of desire for physical sex. The Internet, with its open policy also heavily violates the future status of sexual taboo. Its complete deconstruction might cause a chaotic atmosphere in a society, which has been heavily regulated by unwritten law since it beginnings.
5. Conclusion

The imaginative world of animation was introduced to me through Sunday morning programmes on the Yugoslav national channel and my grandma’s evening readings of Disney’s fairy tales in hardback. In those politically and culturally unstable times of the early 1980s, when the disappearing consciousness of the totalitarian regime and socialist mentality was already coquett ing with some more radical Western capitalist forms of expression, the romantic spirit of child animation seemed untouched. Whether eastern European puppet stop-frame or colourful Disney cartoons, they both shared the very same sense of unspoilt virginal romanticism full of divinely beautiful enchanted princesses waiting to be saved by a single kiss of a gorgeous prince. There was no space for controversial aesthetics of ugly, crippled, deviant in these beautiful stories full of specifically heterosexual coupling and unconditional divine love, a sense of Christian belief imposed upon my perception at an early age. This sense of unmistaken visual perfection enforced by products such as Mattel’s Barbie was deeply anchored in my consciousness throughout the whole phase of my growing up and has somehow remained such until today. Yet, it is just now, that as a grownup, I have started to seriously doubt it. I have learned that sexuality plays an important role in the construction of identity and defines the interpersonal relations. I believe every parent would try their best to preserve the unspoilt naive spirit of childhood, and this is why some kind of sane censorship is still required today.

One day I noticed a child watching Simpsons with a great interest and that reminded me of children having their own world – they see it through their own rainbow glasses of fascinating colors, shapes, funny kid stuff, that is far away from adult understanding of hidden hints, metaphors of adult language. The main goal of animation is to educate, entertain and touch the audiences, and as such it should never exploit their naïve confidence and virginity.

6. Appendix

Appendix A

The noun ‘taboo’ (originating from Tongan ‘tapu’, meaning ‘sa cred’ or ‘prohibited’) had not been known in European etymology until 1777, when Captain Cook returned from one of his trips to Polynesia and introduced it to European audiences. That does not mean that such prohibitions did not exist in European society before that date, they were simply pushed into anonymity and taken as such. Taboo restrictions are different from religious or moral prohibitions. They are not based upon any divine ordinance, they have no grounds and are of unknown origins. Though they are unintelligible to us, to those who are dominated by them they are taken as a matter of course. Wundt describes taboo as the oldest human unwritten code of laws. It is generally supposed that taboo is older than gods and dates back to a period before any kind of religion existed. (Freud, 1913, p.18-19)

Appendix B

Freud isolated scopophilia as one of the component instincts of sexuality, which exist as drives quite independently of the erotogenic zones. At this point he associated scopophilia with taking other people as objects, subjecting them to a controlling and curious gaze. His particular examples centre on the voyeuristic activities of children, their desire to see and make sure of the private and the forbidden (curiosity about other people’s genital and bodily functions, about the presence or absence of the penis and, retrospectively, about the primal scene). (Mulvey, 1975, p. 748)

Appendix C

By the late 1890s, mutoscopes were associated with “adult” material. Yet such displays were often accessible to children. Two sources of documentation, an 1899 Hearst newspaper campaign against ”picture galleries of hell” and U.S. Farm Security Administration photographs of the 1930s, demonstrate the longevity of American children’s access to mutoscopes. The rhetoric of moral panic used in the Hearst campaign was short-lived and self-interested, but instructive in demonstrating how discourse on new media displays a similarly anxious tenor throughout the twentieth century. (Streible, 2003, www.erudit.org)

Appendix D

The British established their censorship board in 1912 and rating system in 1924. Anyone under 16 was forbidden from seeing an H
Society mainly disapproved trans-species coupling and kept it as a taboo ever since the beginnings of the human kind. Although sexual relations with animals are not outlawed in some countries, it is not explicitly condoned anywhere. In most countries, such acts are illegal under animal abuse laws or laws dealing with crimes against nature. Pornography involving sex with animals is widely illegal, even in most countries where the act itself is not explicitly outlawed, but animated bestiality has not been specifically mentioned anywhere. This alleges the assumption that its acceptance hangs upon the flexibility of animated form and storytelling (comic relief) depends on one’s interpretation.

Appendix F

It seems that the main reason behind the national boycott of Disney in 1995 by The Southern Baptist Church and the American Family Association (AFA) was mainly - homophobia. They attacked the company’s recent positive policy towards homosexual employees and gay characters in their films (like Timon and Pumbaa in The Lion King).

Will Drake (American Family Association): ‘Many of those people who write for animation are from a homosexual or even paedophile lifestyle and so they are indeed always on the move to plan things that will encourage young children to follow them!’ (Cartoons Kick Ass, 2001, TV documentary)

Appendix G

‘In 1972, The Hollywood Reporter said that Fritz paid for its costs in four months. A year later, the same paper reported that the film grossed $30 million worldwide and was made with a production budget of $1.3 million.’ (Cohen, 1997, p. 82-83.)
Appendix J
Paraphilias are deviant sexual obsessions differing from "normally" expected human adult sexual behaviour. For example: scatophilia = sexual behaviour aroused by faeces (shown in the Family Guy in the 2001 series Mr. Saturday Knight).

Appendix K
We can read from BBFC statistics, that since 1992, the number of submitted works is slowly increasing, but the percentage of works that needed censorship cuts is in decline (from app. 12% down to 1%). So far in 2009, out of 81 works submitted, none was cut.

Appendix L
The Southern Baptist Church and American Family Association (AFA) have built a strong organisation, and followers not only give generously but apparently are quite active in following their instructions to write letters of complaint. They attack several magazines that they consider pornographic (Playboy and Penthouse), they boycott sponsors who advertise on television shows that they find objectionable. (Cohen, 1997, p. 115.)

Appendix M
Internet pornography statistical research (Ropelato, 2006), compiling several sources like Yahoo, Google, BBC... Confirmed a surprising claim that: 'The pornography industry is larger than the revenues of the top technology companies combined.' (Ropelato, 2006, www.internet-filter-review.toptenreviews.com) That literally means that it is bigger than Microsoft, Google, Amazon, eBay, Yahoo, Apple, Netflix and EarthLink together and it is in constant growth! The research proved that also the number of visits of the sites with pornographic contents is in constant increase since 2001.

The biggest profit from pornography surprisingly goes to China and Korea (Fig. 50), probably because they produce the highest number of sex gadgets, but they also have very strict web policy, banning porn websites, so the United States is an absolute winner in this category (Fig. 51).

As one might notice that the income from pornography video sales is absolutely enormous. The assumed reason for it’s decrease in 2005 might be the increase in internet piracy, which lowered the demand (Fig. 52, 53, 54).

Then surprisingly, another research discovered: 'Adult web masters take note: The fastest-growing market for online porn is Great Britain, according to a Nielsen NetRatings study, which found that UK based users employ the search term “porn” more than any other group in the English-speaking world.' (Hayes, 2006, www.xbiz.com)

Appendix N
In Child porn in cartoon style - man convicted, an article in online Evening Gazette (26. Sept 2008) we learn about a man who downloaded sophisticated realistic pictures of computer generated child pornography and was convicted as a sex offender on the basis of the level of their realism, although these were not photographs. The case is the first of this sort in Great Britain. 'I assumed they were legal,' the convict claimed, adding: 'I assumed that everything was above board and OK. It was there in the public domain.' (Lightfoot, 2008, www.gazettelive.co.uk)

Appendix O
Most of the people I interviewed agreed upon the growth of liberalisation and production of sexual topics in the future. In an online
interview Richard Hughes, expressed these opinions:
Has the viewing culture actually changed our brain and physiol-
ogy of seeing?
‘I think we already see a gradual porn-iication of seeing,
where exposure to sex and porn makes those images and tropes
more common in the media, and where images that had not been
seen as sexual become sexual. So yes.’ (Hughes, 2009, email)
What if the Internet becomes more restrictive to erotic animation?
First, I think that erotica / pornography survives and grows what-
ever the social, cultural, legal or technical, which seek to repress
or police it. The whole history of the contemporary media testifies
to this, and the delivery of pornography is often at the cutting
edge of the use of new technologies. Equally, what is ‘erotic’ or
‘sexual’ is often a matter of culture and context, so it will survive
in different forms in different places. The Internet is essentially
un-policeable at present, and it is unlikely that that will change, I
think. Either way animated work in this area will continue to be
made and find distribution. (Hughes, 2009, email)
Similarly, Paul Wells expressed his opinion about the future prog-
nosis of the erotic animation:
“As far as animation across the platform goes, it is clearly ex-
panding and growing, and it is inevitable that erotic/pornographic
imagery will always be part of that.” (Wells, 2009, email)

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FORBIDDEN FRUIT IN ANIMATION - The Enigma of Sexual Taboo Expressed Through Cartoon Language
Anja Tolar


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Films, Videos, Dvds


Desire and Sexuality - Animating the Unconscious. Vol.1,2,3. Jayne Pilling, the collection Editor and director of the British Animation Awards, has brought together a variety of visually striking and emotionally resonant animated shorts.


Screenplay. Directed by Barry Purves. [animated short, online video] Available at: http://www.youtube.com/watch?v=tod1EsH9Q&feature=related


Visits of exhibitions, museums, festivals


INTERVIEWS, QUESTIONNAIRES, EXPERIMENTS


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In 2002 he created a 22 minutes long clay animated musical comedy about how cavemen and cavewomen discover sex.
He has published widely in the field including Understanding Animation (Routledge 1998), Animation and America (Rutgers University Press, 2002) and Animation: Genre and Authorship (Wallflower Press, 2002). He has also made a Channel Four documentary called Cartoons Kick Ass and three BBC programmes on British Animation, as well as an educational video on Special Effects for the British Film Institute.
HUGHES, James, Ph. D. (2009) IEET Executive Director, a bioethicist and sociologist at Trinity College in Hartford Connecticut USA. Online interview. 5 February 2009.
He is author of Citizen Cyborg and is working on a book Cyborg Buddha, which’s topic about the future of sex he connected with topic of his online article Virtual Sex to No Sex?
The interview was about the aspects of XXX feature production, distribution, classification audiences. She wanted to stay anonymous in order to protect her privacy.
Dan is one of the rarest animation students who openly expresses his attitude towards being homosexual. In an online interview I asked him to express his opinion about the position of gay animation.
How we memorise pictorial material, as stills or moving images?

(2008) a small experiment. 20 November 2008. An experiment that me and two colleagues conducted in November, covered 15 coincidently chosen students and staff from Ravensbourne college, showing them 4 different film stills (2 of them from comedy and 2 from a horror film), asking them random questions about material shown and monitoring their emotional response. The experiment resolved in a film and was used as a part of Film Analysis Unit of BA Animation. (Kieron Dennis- the unit leader).
Form and Function in Animated Character
The Functionality of a Good Character Design

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Abstract
As an experienced painter/drawer I tried to transform most of my artistic knowledge and skills into designing functional character designs for animation. This research’s aim is to help explaining what makes a successful character appealing to the public. From my previous diploma studies, I have decided to have an insight into a complex relationship between viewer’s psyche and the one of the story’s hero on the screen. I intentionally chose to use Remy from one of Pixar’s most popular releases “Rat-a-too-ee” as a case study. The reason for this is obvious- how could something as repulsive as a rat in the kitchen become such a commercial success?

Keywords
Character design, animated character, cartoons, form and function, tactile drawing, texture, manifestation, anthropomorphism, drawing for animation

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1. The story and subconscious

“The fun thing for me about this story is that reminds me of a Shakespeare comedy. His comedies are always about someone pulling a fast one on some other people, trying not to be discovered. That is what this is— but with rats.”


As soon as the viewer’s visual apparatus enters the imaginary world of fairy tales and myths on the screen, he is aware of recurring types and relationships: questing heroes, heralds who call them to adventure, wise old men and women who give them magical gifts, threshold guardians who seem to block their way, shape shifting fellow travellers who confuse and dazzle them, tricksters who upset the status quo and provide comic relief. Jung described these common character types, symbols and relationships as “archetypes”, part of the collective unconscious. These are very constant throughout all times and cultures, in the dreams and personalities of individuals as well as in the mythic imagination of the whole world. The concept of archetypes is an indispensable tool for understanding the purpose or function of characters in a story (Vogler, 1999, p. 29). It appears the story of Ratatouille with its characters involves most of the above listed ingredients, needed for creation of a good film premise. Despite the fact that the film suffered the change of director in between the creation, Bird succeeded to even progress artistic endeavours of previous director’s (Pinkava) with a better story flow. The change of the script gave the right emphasis on the main character. Remy in this case could be described as an archetypal hero of the story, whose dramatic purpose is to give the audience an insight into the story, an anchor point of personal identification. Each person watching a film is invited, in the early stages of the story, to relate with the Hero, to merge with him and see the world of the story through his eyes. Storytellers do this by giving their heroes a combination of qualities, a mix of universal and unique characteristics, emotions and motivations that we can all relate to and recognize in ourselves. (Vogler, 1999, p. 35, 36)

“What did I have in common with a rat who wants to cook? Remy’s dilemma is basically the same as any artist’s... I found myself relating to Remy, a character that sees the seeming impossibility of his dreams and pushes forward anyway, believing that he will find the way past all the obstacles.” (Bird, The Art of Ratatouille, p.9) Remy’s journey becomes ours for a while, but this only happens if the creators of a character achieve a believable enough personality to capture us without former questioning. This is probably the hardest and most important element of animation. Personality is developed by many creative people in the team; voice actors, storyboard artists, animators, the director...but the designer can suggest personality just by how the character looks, before you know anything else about it.

2. The design and its sensual quality

“What makes good character designs for animation? This is a difficult subject. The real answer is a talented character designer who understands the character. Not every great animator is a good designer. In fact, hardly any are.” (John K., On Character Design.)

Many cartoon characters evolve from a basic form. Design itself, in any medium, requires purely an aesthetic sense of balance of pleasing shapes or forms. But there are many different occupations that require design and each has its own special requirements. It is a common belief that design must follow function.

2.1. The Style and Spatial Feeling

“It’s a wonderful premise, especially for animation, because it’s a super-caricatured idea, and animation does caricature better than any other medium around.” (Bird, The Art of Ratatouille, p. 12) The co-director Jan Pinkava, who led the film’s visual development, felt that the look of the film should complement the strong cartooniness of its concept. A talented sculptor who grew up surrounded by the central European tradition of puppetry, he felt the time was right to experiment with CG aesthetics influenced by literally three-dimensional art forms.

He and the production designer agreed on an over-scaled look in which full-sized characters, props and environments would be given the exaggerated dimensions and warm imperfections of miniatures with large characters and sets were caricatured not just in silhouette but in surface; their sculptural as well as graphic qualities.
The decision of a certain art style is essential for character design. It defines the articulation of the form in many ways. We cannot deny the major difference that arises by watching a fully 3D or completely flat 2D animation. Our mind subconsciously implants our feeling of real space and time into an imaginary one. Our spatial vision is divided into a few horizontal and vertical transparent planes that are wrapped around the human body and help us to define the depth of space, distances between objects in it and their position, define their size against ours and feel the consequences of gravity (weight) and define the movement. That is why 3D space gets us soaked in faster than some abstract two-dimensional membrane, where our eye mostly finds hard to penetrate the surface. That is why I believe that 3D characters are more believable in this sense, but there is another factor - the realism.

During my former degree I came to the conclusion that the closer we reach the complete realism of portraying a character, the less space is left for the manifestation of our own imagination. The human mind is an invaluable tool for discovering the “mistakes”. Every deviation from complete realism would not stay unnoticed, that is why Remy’s cartoonish quality makes him so much more believable.

2.2. The Functionality of Form
An animated cartoon character benefits the animator and the viewer if it has an understandable, mostly logical form, without losing its aesthetically pleasing balance of shapes. Redundant details unpleasantly complicate the animation.

To give rats human emotions they had to adjust their facial anatomy. A human’s eyebrows, eyes, nose and mouth are basically all in one forward-facing surface, but a rat has a giant snout in the way. To avoid complications they gave the rats bigger eyes and pulled them further up on the head, so that you can see them with the mouth in a larger variety of head positions, something the animators asked for to help them act and tell the story.

"...many of the characters in Ratatouille look good just from about any angle. That is really helpful to the animators, because we can spend more of our time focusing on our acting and rat behaviour, and less time cheating to make the model look good.” (Walsh, The Art of Ratatouille, p.15)

2.3. The Texture and Tactile Feeling
The other very important element of animation I found in Ratatouille’s effort to achieve a certain quality of different materials, like fur or food. As children we had a chance to actually touch things and store the information of different tactile qualities into subconscious. As we grew up into the world, driven by norms and values we are often deprived the right to touch things, this is why our sense of touch integrated with sight and helped us to “visually touch things”. This is why textures in animation are so important.

2.4. The Colour and Visual Feeling
According to Itten’s colour theory colours have distinctive emotional qualities. In common dark colours have the tendency to move backwards in the visual space and create some kind of more contaminated melancholic atmosphere, while vivid bright colours force themselves into the front and pleasantly animate the visual field.

One of the challenges of the film was the limited range of the colours they could use for the rats. In nature, rats are designed to hide and blend into the environment, but in a movie, they needed their characters to stand out in their surroundings. Despite the limited selection of colours they ended up with a surprisingly rich palette within that range: from blue-grey, to cinnamon-coloured, and even violet-grey rats. The lighting team did a fantastic job of highlighting the subtle contrasts and really making the rats “read” against environments.

Colours also helped to visually reinforce the idea that the human world is more appealing to Remy, more seductive than a rat one. This is why the human world is expressed in warm colours, lighter in value with more local colour, while the rat world is cooler, darker in value and more muted. Colour exchange helped the emotional sight of the story to take Remy from the dark, lonely desolation of the sewers, to the warm, yet still claustrophobic activity of the restaurant.

2.5. Adjustability of the Form
Whether be it for games, comics, animation or merchandise, we cannot ignore the fact that good character designs play an active role in driving the sales of the product in question. While good
character designs help to drive sales, great character designs develop companies and even shape the landscape of the creative industry. What is the core product or platform which your character will be appearing on and where will it be seen and in what medium, directly affects the character design, as different products have different presentation platforms. Ideally a character should be translatable across several platforms to maximize its licensing potential.

Ratatouille is a great example of this. There are several different products- from film to Nintendo, X-box games, wii, ... Each one of these products with its own limitations demands adjusting the original character design, style and the narration, sometimes to such an extent that is hardly recognizable as Remy from Ratatouille.

Trying out some of these products I realised the enormous difference between character design for games and for film. The main switch is done personality-wise, while we still have some distance when empathically enjoying the film, this immediate bondage breaks when playing games. In game we are the character. We have complete control over it Therefore the character design for games needs to be loose enough to allow this kind of manifestation at anytime.

3. The conclusion

When creating character design it is very important to understand what your core product’s target audience is and also to consider the traits and personality that will appeal to it.

Bird brought balance and weight to the events in the story by adopting realistic constraints, like having the rats move around on all fours with the mannerisms and quick movements of real rodents- a choice that underscores the waste gulf between humans and rats. “Since the story is about Remy, a rat trying to cross between those two worlds, I thought it was important to highlight that difference; that he be a four-legged character choosing to walk on two legs,” he says. It was a physical way to present a core story tension. Initially, there was some concern that people might be repulsed by seeing rats move around on four legs. “But I actually feel the more they remind you of their rattiness - the more your heart goes out to them.” (Bird, The Art of Ratatouille, p. 13) Such carefully observed details (they had a fish tank with real rats in the studio to study them) of real behaviour became an important way to anchor fantasy and give solidity of the character’s emotions. “Pixar seems to have taken the world of animation and made it more realistic and believable, yet still leaving us with characters to adore.” (Tucker, The Rodents of Disney) Remy and his family, in comparison to other animated rodents, (Mickey mouse, Tom and Jerry, Cinderella, Stuart The Little, Flushed Away,) actually do rodent things and look like rodents, they scavenge in garbage for food and hide in ceilings, they also do not wear clothing. The humans cannot hear them talk, but they do talk to each other, which is somehow realistic. While we could tell Mickey was a mouse, even without his name, he certainly did not do mouse things or have any true resemblance to a mouse. This, for makers of the film is a very risky feature to preserve the real “rattiness”, and is something that makes this character distinctive and unique in the whole queue of animated rodents.

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O desenho de arquitetura
Viagem da tradição ao digital

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Abstract
O desenho de arquitetura sempre acompanhou a evolução do sociedade, contribuindo para registar uma inestimável informação tipológica e urbanística. Testemunho gráfico de viajantes, através dos “cadernos de viagem”, o seu uso foi-se desvanecendo com a propagação de outras técnicas de representação, como a fotografia. O desenho do arquiteto abarca também realidades físicas ou metodológicas, assim como os conceitos do processo da resolução do projeto. Como docentes, na Universidade de Valencia, tentámos nas nossas aulas, fornecer conceitos, através do desenho, para alimentar o processo retro-alimentador da análise de formas e do pensamento arquitetônico. Conceitos que devem ser integra dos no desenho de hoje, mundo de imagens e técnicas oriundas não só de realidade desenhativa do passado, mas também na virtualidade das representações digitais. Mas como trespassaram os desenhos de arquitetura a sua esfera “operativa” para chegar ao interesse atual do grande público? Actualmente estes desenhos, que evoluíram de acordo com as ferramentas gráficas contemporâneas e os movimentos artísticos, vão coexistindo com as técnicas tradicionais.

Keywords
Arquitetura, desenho, representação, tradicional, digital

1. Universidade Politécnica de Valência, Escola Superior Técnica de Arquitetura, Departamento de Expressão Gráfica Arquitectónica, Cami de Vera s/n, Valencia, España

http://news.bbc.co.uk/1/hi/world/europe/7373998.stm
O desenho de arquitetura

Como docentes, na Universidade de Valência, tentámos por isso fornecer conceitos, através do desenho, para alimentar o processo retro-alimentador da análise de formas e do pensamento arquitetónico. Conceitos estruturais, compositivos, funcionais e espaciais que, com o tempo, irão sedimentar a construção da linguagem própria de cada aluno.

Mas se referimos já que o desenho é um modo de compreender o existente, é também um caminho para supor o inexistente, formalizar o que será construído.

E como ensinar hoje o desenho, num mundo de imagens e técnicas oriundas não só de realidade desenhativa do passado, mas também na virtualidade das representações digitais?

Os exemplos de representações de arquitetura em épocas remotas são muito escassos. Existem, contudo, dois interessantíssimos documentos sobre a imagem de cidades em fontes antigas relativas ao império tardo-romano, como as denominadas Tabula Peutingerianae e NolitiaDignatum; documentos mais geográficos que arquitetônicos, mas que contêm preciosa informação tipológica sobre a arquitetura de então e autênticos proto-registos gráficos de arquitetura.

Nestes dois documentos, eram representados, simbolicamente, fortificações ou aglomerados urbanos, mas há determinadas datas onde certas características específicas e reconhecíveis estão desenhadas, como é o caso de Jerusalém.

Mais tarde, na Peninsula Ibérica, dois desenhadores medievais, Duarte d’Armas, ou o Bispo Francisco Paholac, deixaram importantes testemunhos gráficos. Sobretudo no caso de Frei Paholac, acompanha os registos das suas viagens pastorais, com esquemas descriptivos das populações percorridas. Graças a estes desenhos, é possível obter inestimável informação urbanística e arquitetónica de vários pontos da Espanha medieval.

Não sendo arquitetos, estes viandantes, alimentados pelas suas inquietudes e funções, transportavam consigo a essência do “caderno de viagem”, de conhecer o seu mundo através do desenho.

Este ato de viajar, desde Ulisses, Heródoto ou Marco Polo, implica lançar-se ao desconhecido, descobrir novos mundos e ao próprio ser. O viajante regressa relatao o seu péríplo: assim fez Ulisses, ao voltar a Itaca, Heródoto perfilava inéditos mapas, Polo fantasjava...

Desde sempre, “todo o relato de viagem articula um duplo registo: o narrativo e o descritivo. Marca uma estranha tensão entre geografia e viagem. Narra uma sequência na qual, a curiosidade e fantasia, se encontram no imaginário traçado pelo relato do viajante. Por vezes, esse relato procura a proximidade dos fatos, através do dispositivo da observação”.

Eugene Delacroix, por exemplo, deixou registos escritos e desenhados, como o seu “croquis de viagem” sobre a sua viagem a Marrocos em 1832, registo de referência do viajante romântico ou dos “grand tour”, antecedentes do turismo de massa.

Reportando os “desenhos de viagem” à esfera da representação da arquitetura, concluímos que, posteriormente aos séculos XVI e XVII, é possível encontrar já um número considerável de originais e gravados com este tema, entre “vedute”, plantas e representações híbridas. Para esta proliferação, muitos contribuíram o desenvolvimento das técnicas da perspectiva e impressão.

Mas, a propagação de outras técnicas de representação, como a fotografia, relegou o uso do “cadernos de viagem” apenas para alguns.

É verdade que os arquitetos, escoltados espiritualmente pelos exemplos de alguns mestres como LeCorbusier ou Siza, nunca deixam de perpetuar o romântico prazer de plasmar atmosferas personalizadas nos nossos pequenos cadernos. Esta análise ativa e analítica das “nossas” viagens, pode muitas vezes ser considerada como resposta inconsciente à massificação turística. Le Corbusier, onde as suas 16 viagens a este país são documentadas, desloca estas viagens, com a exibição dos originais de seus seus cadernos de viagem.

5. Os desenhos de Álvaro Siza ganharam, atualmente, o estatuto de “obra de arte”.

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O desenho de arquitetura – viagem do tradicional ao digital

Hugo Barros Costa

2. Comunidade global de desenhadores, que fomenta a prática do desenho realizado “in loco”, em observação direta da vida urbana.

Os seus desenhos, de acordo com o manifesto que elaboraram, “contam a história do seu meio ambiente”, “mostrando o mundo, desenho a desenho”. Ajudam-se comunariamente, quer em encontros organizados, quer em grupos na internet, onde partilham os seus trabalhos, através de blogs e redes sociais.

8. Uma iniciativa de Enrico Casarosa, já a caminho da sua 43ª edição, que consiste numa saída simultânea em várias cidades do mundo para desenhar em comunidade. Cada “maratona de desenho” comportaria e depois divulgada e comentada nas redes sociais.

heiro e convidado “Ximo” (Joaquín Sorolla), para lhe fazer um “apuntet” (esboço) justificando-se “com não fias-se no fotógrafo”. Ibáñez confiava mais na sensibilidade subjetiva e pessoal de Sorolla, porventura mais “real” que as fotografias correspondentes. O ato de desenhar é seletivo, porque é ativo e transcendente, permitindo a triagem de informação e o enfoque dinâmico às opções pessoais do observador. Por isso, implica técnica, reflexão e uma atitude ativa frente à passividade da fotografia (a partir do momento em que se pressiona o disparador). As fotografias são esquecidas até que -apenas parcialmente- se voltam a recordar depois de reveladas em papel, expostas num ecrã ou parede. Mas quem desenhou essa “cena” teve de percorrer com os olhos e depois com a mão todas formas, cores, luzes, contrastes, materiais, detalhes: traduzidos. Todas estas representações são abstraidas e memorizadas criando um arquivo de imagens, que vai construindo o nosso ser geral e em particular como arquitetos; formando o nosso universo enquanto elaboração criteriosa, com meios próprios.

Contudo, os “croquis de viagem”, comuns no século XIX (Fig.1), como já referido, foram caindo no esquecimento, inversamente ao desenvolvimento de outras novas tecnologias de representação.

Esta tendência foi-se contrariando quando, desde o início do novo milénio, fenómenos como os “Urbanskechers”7 ou “Sketch-crawl”8, catapultaram os croquis de viagem para um franco renascimento e difusão global (Fig.2). Além disso, os tradicionais croquis associaram-se às plataformas digitais como instrumentos de desenho (“tablets” e “smartphones”), com ampla profusão de blogs e sítios, onde, virtualmente, se pode “espeitar” os blocos digitalizados e inclusive viagens à volta do mundo relatados por desenhos partilhados “on line”.

Será que toda esta dinâmica provocou o repensar do fenómeno do “croquis de viagem”, ao ponto de se tornar justamente o tema central do próximo Congresso Internacional de Expressão Gráfica Arquitetónica, “O desenho de viagem dos arquitetos”? Obviamente, o arquiteto utiliza o desenho para além das suas viagens, no desenvolvimento das suas tarefas, em momentos sucessivos e de várias formas: com diferentes níveis de exigência e precisão, desde o croquis informal até à representação terminada e codificada, que usualmente chamamos como “plantas, cortes e alçados” de um projeto. Existe assim, uma dimensão imediata e evidente em todo este trabalho gráfico, associada à sua eficácia instrumental, desde a génese do projeto até à sua comunicação na fase de obra.

Parece-nos então que, o pensamento e processo arquitetónico-os, não são possíveis sem o apoio do desenho.

Como docentes, na Universidade de Valencia, tentámos por isso fornecer conceitos, através do desenho, para alimentar o processo retro-alimentador da análise de formas e do pensamento arquitetónico. Conceitos estruturais, compositivos, funcionais e espaciais que, com o tempo, irão sedimentar e construção da linguagem própria de cada aluno.

Mas se referimos já que o desenho é um modo de compreender o existente, é também um caminho para supor o inexistente, formalizar o que será construído.

E como ensinar hoje o desenho, num mundo de imagens e técnicas oriundas não só de realidade desenhativa do passado, mas também na virtualidade das representações digitais?

Depois dos tempos convulsos das relações entre arquitetura e o desenho, uma das conclusões do Congreso Internacional de Expresión Gráfica Arquitectónica realizado em maio de 2008 em Madrid, onde as atitudes confrontadas tradição/informática que afloram neste contexto, se apresentavam como irreconciliáveis, parece que a tendência se inverteu, ou então que foram criados meios híbridos para a simbiose das técnicas referidas.

Os meios informáticos são mais um instrumento e, ensinar o desenho hoje, compreende uma atividade cujos procedimentos se relacionam diretamente não só com a realidade do desenho do passado, mas também com um novo mundo da virtualidade gráfica.

O ponto de vista dos docentes de desenho ganha, sobre este tema, uma especial relevância. Não nos preocupa demasiado o virtuosismo das artes manuais, ou os aspetos adjetivos ou marginais das técnicas gráficas, informáticas ou não, mas sim o caráter instrumental do desenho arquitetónico e o valor amplamente formativo do seu desenvolvimento para os estudantes de arquitetura.
Obviamente que, cada vez mais, o desenho digital terá uma aplicação crescentemente generalizada; todavia, se o computador é, indubitavelmente, uma ferramenta de portentosa eficácia e enorme potencial nas mãos do arquiteto, parece-nos que se tornou indispensável por razões “externas” à natureza e regime intelectual do trabalho do arquiteto. O que é realmente relevante é como pode multiplicar o seu universo gráfico, visual, imaginário, experimental e comunicativo.

Peter Einsenman defende que o desenho manual continuará a ser fundamental, porque sempre se concebe através do esboço, precedente de um desenho feito no computador. Os computadores “ainda” não têm a capacidade de inventar conceitos.

No nosso ambiente de trabalho, a Universidade Politécnica de Valência, vamo-nos dando conta, em disciplinas relacionadas com o desenho ou a representação de projetos, que programas infográficos como, por exemplo, o 3d-Studio, tão em voga na última década e aparentemente indispensável em qualquer concurso de arquitetura, começam a ser surpreendentemente substituídos ou complementados por técnicas tradicionais como o simples desenho com um marcador. Mesmo assim, é interessante que outros programas, como o Sketch-up, mais um programa amplamente generalizado, se pode definir por uma série de instruções vetoriais que “imitam” e “adaptam” o desenho “tradicional”. Contudo, a adaptação é recíproca, uma vez que a simples esferográfica é um dos instrumentos tradicionais favoritos entre os estudantes, pelos ótimos resultados que resultam da sua digitalização (comparativamente ao grafite, por exemplo), que pode ser facilmente usada em collages digitais.

Externa à Universidade, também os concursos de arquitetura como o Eu roman4, que desde 1988, ano da sua primeira edição, vem sendo uma mostra do desenvolvimento de conceitos gráficos, demonstram a tendência do uso híbrido de técnicas tradicionais com programas informáticos.

Atualmente os desenhos dos arquitetos tem evoluído de acordo com as ferramentas gráficas contemporâneas e os movimentos artísticos, incluindo todo o tipo de técnicas como collages ou apresentações originadas pelas nuvens de pontos que cria o scanner-laser 3D(Fig.3).

O método de trabalho com este scanner, que usamos habitualmente no nosso grupo de investigação em Valência e que pode obter e representar milhões de pontos por segundo, é um exemplo de como as ferramentas digitais se complementam com as tradicionais. Assim, ao desenvolver este contemporâneo método de trabalho de campo/processamento de dados digital, reparamos, paradoxalmente, que os suportes de registo tradicionais, principiando como simples esquemas de localização do scanner, iam, cada vez mais, fornecendo preciosa informação de formas, cores, materiais, detalhes...

Ao processar os dados digitais obtidos, depois de cada sessão de levantamento, era reafirmada a valiosa informação dos croquis. Estes desenhos, paralelos à comprovada eficácia do laser, afloram a questão, onde e de que forma, o rigor digital, no campo da arquitetura, necessita o suporte mental e físico do desenho tradicional. Devemos admitir que é possível realizar o levantamento laser sem o apoio do desenho, mas este é um complemento que acrescenta valor à análise formal (com todos os conceitos aqui implicados), memória visual e estrutura do trabalho de campo. Estes desenhos facultam à forma digital resultante, comunicação criativa e comunicação operativa, ou seja, uma linguagem simultaneamente informativa e analítica.

O desenho tradicional não será certamente substituído pelo digital, contudo, naturalmente, diferentes tipos de desenho irão coexistir, como sempre e como podemos verificar nas exposições de desenhos de arquitetura:

“…” as exposições, proporcionam cada vez mais oportunidades para que os arquitetos experimentem novas formas de representação envolvente tecnologia eletrónica, estando estes diversos meios a ganhar terreno na prática diária arquitetônica, embora a coleção (MOMA, The Museum of Modern Art) provavelmente refita a sua amplitude e diversidade. Nada melhor do que as evasenantes e belas aguarelas de Lauretta Vinciarelli, elas mesmas um salto fora do desenho tradicional de arquitetura...”


para chegar ao interesse atual do grande público no referido museu de Nova York ou noutros conceituados espaços expositivos? Como percorreram o caminho desde desenhos pessoais, técnicos, informativos, militares e/ou geográficos até se tornarem “obras de arte”? 

Interessante contextualizar o “desenho de arquitetura” no seio da profissão, mas também como o vêem publicamente. Se as manifestações e publicações referentes aos desenhos de arquitetura se multiplicaram nos anos 70 e 80, tornando-se frequentes em países como a Inglaterra, Estados Unidos, Itália e Alemanha, nem sempre foi exatamente assim. Como referência a esta mudança dramática do desenho de arquitetura para a sociedade em geral, analisar as exposições desenvolvidas no MOMA pelo seu Departamento de Arquitectura e Desenho.

A primeira exposição de Arquitetura naquele Museu, organizada por Philip Johnson e Henry-Russell Hitchcock, em 1932, integrou sobretudo maquetas e fotografias, constando apenas de alguns desenhos.

Relativamente a esta exposição, Matilda MCQUAID referiu: “o interesse ávido do Departamento em maquetas e fotografias e a exclusão de desenhos na coleção de então, refletia uma atitude na qual o edifício era visto como uma obra de arte e o desenho como relativamente insignificante, ainda que uma parte integrante do processo de desenho.”

Em finais dos anos 30, o Departamento tinha organizado cerca de 12 exposições caracterizadas pela (relativa) pouca importância dada aos desenhos de arquitetura, em comparação com os supor-


F.3 Plano Castillo de Peñíscola (Hugo Costa/2013), Peñíscola, Castellón, España (Nube de puntos / laser-scanner 3D)

“Uma boca cheia de palavras”
Construção de um livro interativo para a infância

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Abstract
A necessidade de registar uma ideia através da imagem ou de códigos sempre teve um lugar importante na comunicação e na transmissão de conhecimentos. Do desenho à cultura escrita, das gravuras pré-históricas às iluminuras, dos livros medievais aos livros ilustrados de hoje, a imagem tem sido utilizada para um mesmo fim, um meio educativo, sempre próxima da linguagem verbal e da escrita. Na literatura infantil o uso da imagem está associado às crianças menos experientes na matéria de leitura e escrita. Ao torna-se um leitor mais experiente, a presença da imagem torna-se rara e a que existe nem sempre é trabalhada para estimular todos os sentidos de quem lê. O presente artigo tem como objetivo descrever o processo de estudo e construção de um livro ilustrado interativo, “Uma boca cheia de palavras”, desenvolvido no âmbito do projeto Mestrado em Ilustração e Animação do Instituto Politécnico do Cávado e Ave. Pretende-se apresentar o livro ilustrado interativo e as atividades e experiências visuais como instrumentos que ajudam a criança a crescer sem medos, onde descobrem e desenvolvem aptidões e competências, através de uma exploração e apreciação mais completa do objeto, o livro.

Keywords
Ludicidade, ilustração, livro ilustrado e interativo

1. Escola Superior de Tecnologia - IPCA, MIA - Mestrado em Ilustração e Animação, Portugal
1. Introdução

A imagem sempre foi reconhecida como um excelente instrumento pedagógico/didático e como elemento de sedução e cativação dos leitores. Os livros da “Bibliothèque Rose Illustée” de Louis Hachette, 1838, são exemplos do florescimento do livro ilustrado e da presença sistemática da imagem tornando-se uma marca e um atrativo na sua coleção. Ou ainda os populares livros de Lothar Meggendorfer, 1880, onde as figuras eram móveis recriando a tridimensionalidade de um circo ou de uma casa, tudo através de engenhosos dispositivos mecânicos criados para superar a imaginação do seu leitor. A linguagem visual tornou-se um elemento indispensável nos livros para crianças confrontando-se com a linguagem verbal, num jogo entre o dizer e o mostrar. Atualmente a ilustração, no caso dos livros para os mais pequenos e para os primeiros leitores, ocupa um lugar destacado onde a linguagem visual corresponde exatamente ao assunto que é tratado na linguagem verbal. 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. Nesta fase a criança dedica muita atenção ao que tem em mãos, seja um livro ou um brinquedo, e explora-os usando os cinco sentidos. A criança embora não saiba ler, ela consegue encontrar nas imagens vários enredos, estimulando a imaginação e a criatividade. À medida que esta se torna um leitor experiente e adquire um pensamento lógico, a ilustração deve ser reforçada para que a linguagem verbal seja completada e iluminada. A imagem adquiriu progressivamente um estatuto e uma posição, prova é a sua constante expansão no espaço do livro. Esta invasão, devido ao aparecimento das cores e a flexibilidade das técnicas de reprodução, foi e é explorada pela criatividade e a imaginação dos seus criadores. Assim, a ilustração conquista o livro, saindo do seu interior até às guardas, à capa, ao álbum com texto reduzido ou sem texto, do livro jogo, do livro interativo. O aparecimento de várias editoras que se centraram, não só nas características do público alvo mas também, nas qualidades formais e plásticas abriu novos espaços para a leitura do livro. As ilustrações dialogam com correntes pictóricas ou outras correntes artísticas e supõem um leitor infantil capaz de ler e apreciar as imagens, a narrativa, o livro. Obras como a do pintor El Lissitzky, A história dos dois quadrados, 1922, como se trata de um o livro para a infância é uma forma de expressão, como refere Isabelle Nières-Chevrel (2001[2]), um objeto que contém um jogo entre o texto e a imagem, e para o podermos apreciar temos que observar o espaço ocupado por estas duas linguagens. Assim, é importante que a criança cresça a explorar a linguagem visual a par da verbal para aprender a ver, saber ler e perceber as imagens que connosco convívem diariamente.

Este artigo apresenta o processo de construção de um protótipo de um livro ilustrado interativo, “Uma boca cheia de palavras”, projeto prático realizado no âmbito do Mestrado de Ilustração e Animação do Instituto Politécnico do Cávado e Ave. O projeto apresentado nasceu do interesse e da necessidade de criar um instrumento que incentive o uso das diferentes expressões educando os sentidos do jovem leitor. “Uma boca cheia de palavras”, para crianças entre os oito e dez anos, estimula de uma forma lúdica e criativa a visão, o tato, o movimento, a palavra e o pensamento verbal e visual. Um livro híbrido, ilustrado interativo, que compreende uma narrativa, ilustrações, um espaço criado pela relação entre a linguagem verbal e visual, interatividade e lugar para que a criança aja, participe e complete tornando-se também autor, criador e ilustrador do objeto, o livro.

2. O livro ilustrado para a infância

A publicação do livro infantil evoluiu desde os meados do século XVIII, especialmente a promoção do papel e do lugar da ilustração. A imagem adquiriu progressivamente um estatuto e uma posição, prova é a sua constante expansão no espaço do livro. Esta invasão, devido ao aparecimento das cores e a flexibilidade das técnicas de reprodução, foi e é explorada pela criatividade e a imaginação dos seus criadores. Assim, a ilustração conquista o livro, saindo do seu interior até às guardas, à capa, ao álbum com texto reduzido ou sem texto, do livro jogo, do livro interativo. O aparecimento de várias editoras que se centraram, não só nas características do público alvo mas também, nas qualidades formais e plásticas abriram novos caminhos para a leitura do livro. As ilustrações dialogam com correntes pictóricas ou outras correntes artísticas e supõem um leitor infantil capaz de ler e apreciar as imagens, a narrativa, o livro. Obras como a do pintor El Lissitzky, A história dos dois quadrados, 1922, como se trata de um
quadro do suprematismo; ou O espantalho, um conto, 1925, coautoria de Kurt Schwitters, Käte Steinitz e Theo van Doesburg, onde as palavras, silabas e frases são usados na ilustração; ou Sea is Blue when the sky is Blue (1995), de Katsumi Komagata que usa as figuras simplificadas e os recortes e para narrar uma história; entre outros. Estes objetos incentivam a exploração e a experimentação pessoal permitindo educar o gosto do jovem leitor num mundo tão vasto como o mundo do livro para a infância. Objetos que têm de ser analisados como um todo, desde o formato, o suporte, os materiais, o seu conteúdo, o jogo entre a imagem e o texto, entre outros, permitindo uma apreciação máxima do funcionamento do livro para a infância.

2.1. Livro interativo

Ler um livro requer ação. Ação que inicia no momento em que tiramos o livro da estante, o abrimos e passamos página após página, até o fechamos. De facto, toda a leitura solicita uma forma mais ou menos subtil de ação, “(...) the eye pauses and skips over lines of texts, glances back and forth over illustrations, endnotes, and others parts that draw attention.” (Gillieson, 2008[3]). O processo de leitura e a forma da ação dependem do tipo de livro e da experiência que este nos proporciona explorando a materialidade, as diferentes linguagens, o tempo e o espaço. Assim, o ato convencional de ler pode ser alterado e exigir uma ação diferente, mais dinâmica, permitindo uma leitura desafiadora e uma apreciação mais criativa do livro. No livro interativo para a infância, objeto de estudo do presente artigo, necessita de uma ação dinâmica e da experiência pró-ativa do jovem leitor para que este consiga apreciar na totalidade o livro. A interatividade e o tipo de ação que proporcionam pode apresentar características diversas, desde os aspetos formais ao conteúdo às atividades propostas, tudo pensado para uma finalidade ou finalidades específicas. Assim, as seguintes referências foram agrupadas tendo em conta a ação e alguns aspetos da sua organização interna. Livros que:

1) apresentam um jogo entre a estrutura narrativa e a ação, expondo uma história com princípio, meio e fim oferecendo uma exploração táctil e mais ativa do suporte e da imagem através de cortes, pop-up e outros mecanismos;

2) incluem sugestões e atividades diversas dirigidas por pequenas questões e pistas fornecendo um espaço no próprio livro para a realização de cada tarefa;

3) livros-jogos que proporcionam jogos e atividades exploratórias de imagens, materiais e suportes. Estas categorias não são estanques e alguns livros podem enquadrar-se em mais do que uma simultaneamente.

The Little Flower King (2010[4]) de Kvëta Pacovská inclui-se no primeiro grupo, onde o jogo entre a ação e a narrativa é evidente. Um corte quadrado, que surge na capa, miolo e contracapa, é usado como janela que abre caminho para as aventuras de um pequeno rei que procura a verdadeira felicidade. A interação entre o texto e a imagem fornecem ao leitor um pequeno deslumbrar da ação, dos diferentes espaços e momentos em que a história se desenrola. O jogo dos cortes oferece liberdade ao jovem leitor de criar a sua própria história, podendo abrir o livro em qualquer página ou voltar atrás em qualquer momento.

The Onion’s Great Escape (2012[5]), projetado por Sara Fanelli, pertence ao segundo grupo, inclui atividades e sugestões diversas dirigidas por pequenas questões e pistas que exige uma ação ativa entre o leitor e o objeto livro. É através de uma série de perguntas e atividades, que pedem respostas escritas ou desenhadas, que uma cebola pede auxílio para se libertar do seu destino, a frigideira. Página a página a cebola é perfurada para que o jovem leitor possa gradualmente destacar a figura. O resultado final é uma forma tridimensional, uma cebola colorida. Este livro interativo incentiva o leitor a usar a imaginação e a expressão trabalhando opiniões e ideias sobre diferentes temas e questões complexas através das duas linguagens: escrita e gráfica.

1. Pop-up, sistema de esconderijos, abas, encaixes, etc., que permite mobilidade dos elementos, ou mesmo um desdobramento de dois a três dimensões. (Linden, 2011[13])


O último livro pertence ao grupo de livros interativos que proporcionam jogos e atividades exploratórias de imagens, materiais, suportes, bidimensional e tridimensional, as texturas,
as cores,... um laboratório que oferece à criança experiências sensoriais, plásticas, criativas e construtivas. The game of sculpture (2012[6]) é constituído por diferentes peças de cartão coloridos destacáveis, com fendas e buracos, e convida a criança a juntar uns aos outros ou acrescentar materiais como canetas, pedaços de papel, e muito mais. As peças podem ser desmontadas e congradas várias vezes criando infinitas possibilidades. Tullet através deste livro propicia um momento divertido utilizando a ação para estimular os jovens leitores a pensar com imaginação, de forma independente e criativa.

Os exemplos aqui expostos fazem parte do vasto leque de livros interativos que trabalham como veículos de comunicação e que permitem à criança uma apreciação mais completa e variada do livro. Todos abordam uma ação evidente e ativa, um jogo entre a linguagem verbal e visual, entre o bidimensional e o tridimensional, exploram as experiências visuais e tácteis, a regra com o acaso e a forma com a "não forma"... Caraterísticas que em conjunto narram uma história, um momento, criando estímulos para que a criança experimente, imagine, descubra, explore e desenvolva capacidades estéticas, emocionais e intelectuais.

2.2. “Uma boca cheia de palavras”, um livro ilustrado interativo

É frequente observarmos a criança ou o adulto desamparados ou pouco à vontade perante uma imagem ou mesmo justificar o seu fracasso perante as atividades plásticas como uma incapacidade inata, desperdiçando-se uma importante ferramenta de pensamento, de comunicação e de expressão. Estes sentimentos não se verificam nas idades em fase inicial de aprendizagem. Nesta etapa, a criança manifesta prazer e satisfação neste tipo de atividades. “Qualquer um de nós que se lembre da infância,... sabe que há o impulso de riscar, de ver deslizar pela folha de papel o lápis, a ânsia pela cor, mas sobretudo pela identificação do resultado com "um algo", ainda que no suporte nada se reconheça” (Tavares, 2009[7]). O desenho surge como continuação do movimento motor do braço e da mão da criança, o garatujar, para a fase de procura de semelhanças entre o registo e o que a rodeia. Gradualmente o desenho evolui e inclui todo o conhecimento que a criança adquiriu até à tentativa de imitação visual da realidade através da observação. Alguns autores, como Alcino Souza (1970[8]), alertam para o facto de que algumas crianças tornam-se inseguras durante esta fase e em algumas situações verifica-se a perda do gosto pelo desenho, tornando-se, a partir dessa idade, incapazes de realizar tais atividades. “Despite this natural competence, most of us hesitate to draw. Some people seem to have an inborn ability to draw, but most are scared and embarrassed when they have to pick up a pencil and draw something.” (Massironi, 2002[9]). Por isso é importante ajudar a criança a superar estas inseguranças, proporcionando-lhes experiências de desenho e experimentação, e atividades que desenvolvam a capacidade de observar, a criatividade e a imaginação. Este projeto pretende ir ao encontro dessa necessidade, e materializando-se na construção de um livro ilustrado interativo, lúdico e divertido que permite a cada jovem leitor criar e experimentar sem limites. A elaboração do protótipo de um livro ilustrado interativo intitulado “Uma boca cheia de palavras” teve como objectivos conhecer o mundo do livro ilustrado, elevar o leitor a um universo de imaginação e experimentar a sua potencialidade. A criança tem a capacidade de criar e desenvolver a leitura visual e verbal, de uma forma equilibrada que permita e incentive a criação artística. Para tal foi realizada uma pesquisa alargada de forma a identificar as principais características do livro ilustrado e, em particular, do livro ilustrado interativo e o seu papel no desenvolvimento de aptidões e competências da criança. Esta revisão bibliográfica serviu de plataforma teórica para o desenvolvimento do protótipo, “Uma boca cheia de palavras”, dirigido a crianças entre os oito e os dez anos. A definição do público-alvo teve como base orientações do Serviço de Apoio à Leitura do Instituto Português do Livro e das Bibliotecas e estudos de vários autores que trabalharam e estudaram o desenvolvimento da criança como Piaget, Luquet, Arnheim, entre outros.

“Uma boca cheia de palavras”, apresenta uma história ilus-
uma boca cheia de palavras" - Construção de um livro interativo para a infância
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trada original, escrita em português, adaptada para um espaço em que a imagem prevalece, o livro. Deste modo, o texto é breve e intenso devido à área restrita que ocupa, assume diferentes formas e funções consoante a imagem e os relatos dos locais onde a história ocorre e das personagens são raros ou pouco claros de forma a serem completados pela imagem. O discurso textual e plástico relatam a história de Martim, um menino de três anos, que ao contrário dos meninos da sua idade ainda não tinha dito as suas primeiras palavras. Das interações e estímulos da sua família e vizinhos e o encontro com o seu novo amigo canídeo, Bacon, levam o Martim a falar. O formato escolhido foi o vertical com a proporção de 4:5, 20cmx25cm, e comporta 44 páginas. A escolha do formato teve em conta, para além do público alvo, a linguagem e características visuais/plásticas da ilustração, onde a imagem é pormenorizada e descreve personagens, espaços e paisagens. Os estudos das personagens principais foram os mais detalhados e experimentados, no que se refere à indumentária e características físicas. Os pormenores e cores da sua roupa, o corte de cabelo e estilo, são características visuais importantes pois permitem ao leitor reconhecer rapidamente cada uma das personagens. Além disso, a imagem tem a capacidade de atribuir à personagem personalidade e emoções. Dois dos exemplos mais conhecidos na literatura infantil são as personagens Max, do livro Onde vivem os monstros (2009) de Maurice Sendak, que veste um pijama de raposa branca, e o Wally dos livros Onde está o Wally? (1987) de Martin Handford, vestido com a sua camisola e gorro às riscas. A fonte e o tamanho foram pensados em função da expressão visual e plástica com o intuito de criar uma composição coerente entre a imagem e o texto. Desta forma pretende-se ajudar a criança a reconhecer que está perante uma atividade que o convide a criar, explorar e completar o livro.

A primeira atividade (figura seis) parte da apresentação das personagens - a personagem principal Martim, os seus irmãos e o resto da família retratada nas molduras penduradas na parede. Uma pincelada na página direita expõe uma pequena instrução que avisa “A página seguinte tem uma parede cheia de molduras vazias. Desenhe neles os diferentes elementos da família Brandão.”

A atividade usa as duas linguagens: o texto da instrução e a imagem. O texto tem como função propor uma atividade e indicar o local onde se realiza. A ilustração tem como objetivo estimular a criança a observar as imagens e perceber as combinações entre o desenho, a pintura e a colagem da página dupla: as sobreposições...
e o uso simultâneo de várias técnicas possibilitou a composição de fundos texturados, coloridos, repletos de recortes e decalques de letras, papéis e números; as transparências e velaturas através de tintas aguarelavéis e acrílicas diluídas ou secas, contrastam com o traço, grafito e textura dos diferentes materiais riscadores utilizados (lápis de cera, lápis de cor e lápis de grafite). O intuito é que a criança observe as ilustrações e se sinta motivada a explorar na atividade (figura sete) o desenho, o uso de diferentes materiais e técnicas tais como o recorte e a colagem.

Noutra atividade é pedido aos leitores para desenharem diferentes esboços de cães e escolherem um para a mascote de Martim, Bacon. As primeiras imagens e descrições do canídeo são escassas e poucas para que a criança se sinta à vontade de pesquisar, procurar e desenhar vários tipos de cães.

A própria capa brinca com o título e a história. Apresenta a personagem principal, Martim, enquanto a contracapa surge o cão. Este jogo estimula o leitor a ler a história para perceber a relação entre as duas personagens. O grande plano do rosto de Martim apresenta o título, como se tratasse da sua boca, num fundo azul texturado com lápis de cera. Na contracapa o braço da personagem principal, que surge desde a capa, abraça o seu novo amigo (e o próprio livro). O contraste entre um cenário “limpo” da capa e do “ruidoso” da contracapa e o abraço amistoso das personagens acompanham a sequência narrativa do livro.

O projeto “Uma boca cheia de palavras” pretende que a criança desenvolva uma linguagem plástica que seja pessoal e natural, sem que aprenda a forma correta, estereótipos ou fórmulas. O desenho por modelos “(...) no pás de un ‘truco’, y puede tener como consecuencia que el niño desista de desarrollar sus capaci-
De uma forma lúdica e ativa a criança desenvolverá capacidades de motricidade fina e ampla, estimula o olhar, as habilidades de pensamento, como a interpretação, tomada de decisão, a capacidade criadora e o sentido estético e crítico ao explorar e trabalhar a imagem. Tenciona-se que o desenho, a pintura, a colagem, e outras atividades plásticas sejam instrumentos importantes e que a imagem deixe de ser algo incompreensível e distante. Uma ferramenta que permita ao futuro adulto ler, analisar, explicar e criar uma imagem.

Salientamos também a importância da construção de uma narrativa textual e visual articulada, aplicando os estudos previamente desenvolvidos sobre o desenho, a pintura, o design e as teorias do desenvolvimento infantil. Deste modo, procurámos responder às necessidades do público-alvo em causa. A ilustração e o texto devem interagir e completar-se, de forma a criar um equilíbrio entre eles, narrando alternadamente a história. As escolhas plásticas e as opções técnicas utilizadas na composição dos diferentes elementos que constituem a ilustração, para além do importante sentido estético, têm um efeito de prender a curiosidade e a atenção do jovem leitor, através do jogo entre as técnicas, linguagens, espaços, momentos de suspense e diversão.

Toda a estrutura narrativa, do texto às atividades, e a estrutura formal do livro, desde o formato, proporção, número de páginas, tipografia, a capa e os elementos paratextuais, organização espacial da imagem e do texto e o espaço para a realização de atividades e ilustração têm um papel importante a desempenhar. Todos estes elementos contribuem para o sentido estético do livro mas devem ter em conta aspetos como a facilidade de manipulação e transporte do objeto para que a criança o descubra e o aprecie.

3. Conclusão
O livro, “Uma boca cheia de palavras”, realizado no âmbito do projeto do Mestrado em Ilustração e Animação, do Instituto Politécnico do Cávado e Ave, procura integrar muitas das características enunciadas anteriormente e consideradas mais importantes, indou, em simultâneo, ao encontro das necessidades e particularidades do público a quem se destina. Uma proposta aberta para que o jovem leitor explore a história e intervenha, como autor, na construção desta. Para além disso, foi um exercício multidisciplinar, uma oportunidade para colocar em prática os conhecimentos e competências adquiridos ao longo do curso do Mestrado de Ilustração e Animação.

O projeto realizado contribuiu para a compreensão do livro interativo, o seu papel e as suas estratégias de concepção. Este processo de aprendizagem não se encerra com este projeto, esclareceu dúvidas, incertezas e mostrou novos caminhos para um percurso que é contínuo e de crescimento pessoal. Podemos concluir dizendo que as expectativas futuras serão propor a edição do livro ilustrado e interativo “Uma boca cheia de palavras” a várias editoras e continuar a criar ilustrações e livros que ofereçam ampliados múltiplos conhecimentos potenciando o desenvolvimento e crescimento de cada jovem leitor.

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Abstract
Este artigo apresenta um projecto de investigação que tem como objetivo refletir sobre o papel do animador na conceção de videogames na área dos jogos sérios (serious games). Esta ação considera a adequação da função principal do jogo, no sentido do tratamento ser prioritário em relação ao entretenimento, não descurando que a função lúdica é essencial para motivar o paciente/jogador para a utilização do jogo no seu tratamento/ação terapêutica.

O projeto desenvolve-se em parceria entre o Instituto Politécnico do Cávado e Ave, nomeadamente às ações de design do videogame, e a Universidade do Minho, no que diz respeito à sua programação. Pretende-se a validar científica e clinicamente o projeto através do desenvolvimento de um protótipo a ser testado por uma instituição clínica credenciada na área da fisioterapia e com trabalho reconhecido na área.

Keywords
Animação, Ilustração/Desenho, Jogos Sérios, Jogos Digitais Terapêuticos, Jogos e Personagens 3d, Fisioterapia, Motivação, Realidade Aumentada/Kinect.
1. Introdução
A humanidade “joga” desde a sua origem (Fig. 1). Os jogos antigos demonstram como ao longo da história se desenvolveram atividades recreativas com base em regras pré-acordadas, com um determinado objetivo e, normalmente, com um vencedor e um vencido (THOMPSON, BERBANK-GREEN, CUSWORTH, 2008).

No processo de evolução dos jogos, podemos afirmar que os videojogos constituem a adaptação da necessidade de atividades lúdico/recreativas do homem à evolução, a nível tecnológico, na qual um dispositivo (computador, consola ou dispositivo móvel) gera dinamicamente imagens expostas num monitor podendo o jogador interagir com as mesmas, tendo como base um conjunto de regras para atingirem um objetivo.

Pong (1977) (Fig. 2) não foi o primeiro jogo de computador da história, mas foi o primeiro para consumo privado doméstico, tendo como predecessora a OXO/ Noughts and Crosses - Tic-Tac-Toe (1952) [Fonte: www.dcs.warwick.ac.uk/~edsac/]; o Tennis for Two (1958) [Fonte: www.bnl.gov/bnlweb/history/higinbotham.asp]; e o Spacewar! (1961) [Fonte: www.wheels.org/spacewar/creative/SpacewarOrigin.html], originando o advento dos jogos de computador para consumo individual, promovendo a criação de diversos géneros de videojogos como plataformas, estratégia, aventura, entre outros. Assim, a evolução das tecnologias de informação permitiu não só maior comunicação e acesso à informação em múltiplas plataformas, mas também ao desenvolvimento de novas formas de entretenimento.

Nos anos 80, os videojogos saem do contexto arcade e dos salões de jogos para os nossos lares com o nascimento das primeiras consolas caseiras, proporcionando os primeiros torneios de jogos, analisando a evolução dos jogos de computador podemos afirmar que é nos anos 90 que se dá a verdadeira explosão da indústria dos videojogos, contribuindo para isso a massificação dos computadores pessoais e das consolas dedicadas a jogos, gerando a criação de videojogos próprios, mas também pelo nascimento das primeiras consolas portáteis e dos primeiros jogos online. O novo século trouxe-nos a generalização do acesso à Internet e, com isso, a criação de comunidades de jogos online ou os jogos associados ao fenômeno das redes sociais, trouxe-nos ainda os videojogos para os bolsos dos utilizadores (consolas portáteis, tablets e telemóveis), transformando-se na maior indústria de entretenimento de hoje em dia, ultrapassando a do cinema e a da música em conjunto.

No contexto dos videojogos descrito, apresentam-se variadíssimos géneros e conceitos que estão em constante desenvolvimento ou inovação acompanhando a própria evolução tecnológica. Apesar de frequentemente se associar os videojogos a uma cultura/promoção da violência, do sedentarismo, do isolamento social ou de um certo estilo de vida underground existe, na realidade, uma outra perspetiva que leva a encarar os videojogos como ferramentas de transmissão de um outro tipo de conteúdos. Combatendo este estigma tem-se vindo a notar uma maior aposta em lançamento de videojogos com um outro paradigma, são disso exemplo, entre outros, jogos cujo objetivo é proporcionar o exercício físico como o Wii Fit desenvolvido para a consola Wii da Nintendo ou promovendo o convívio familiar ou entre amigos como o Singstar, para a Playstation, da Sony (Fig. 3).
Determinado por estes princípios, surge o conceito de Jogo Sério, uma espécie de revivalismo da ideia de Edutainment, muito em voga nos anos 80/90, que se traduzia, de uma forma simples, na utilização de jogos para ensinar.

2. Jogos Sérios

O que são jogos sérios?

A definição de jogo sério não é consensual pois depende da perspetiva de quem a define mas, de um modo geral, um Jogo Sério tem como base os princípios de um jogo, mas em que a sua função principal passa do entretenimento puro para a transmissão de conteúdos/conhecimentos ao jogador em áreas como a gestão ou educação, a experimentação científica, a saúde, o planeamento urbano e a engenharia, a religião, a política ou a publicidade, entre outras.

Sendo uma atividade baseada na “mecânica” de um jogo, o objetivo será a obtenção de novos conhecimentos sobre um tópico/área proporcionando alterações positivas no comportamento do jogador servindo-se para isso da estimulação do envolvimento do jogador, como se se tratasse de um jogo comercial, desenvolvendo novas capacidades e conhecimentos, promovendo um novo comportamento após o término do jogo.

Originalmente desenvolvido para treino com ins militares de defesa, Army Battlezone (Fig. 4), criado pela empresa Atari, é referido como o primeiro videogame sério da história.

F.4 Army Battlezone [Fonte: atari.vg-network.com/arc101_2.html]

Evoluindo do “simples” treino de tropas em situações reais de combate, a área de aplicação destes videogames sofreu um grande crescimento com os avanços tecnológicos acompanhando as transformações da indústria mundial de jogos digitais e proporcionando ao mesmo tempo oportunidades de negócio e possibilidades de investigação e desenvolvimento em áreas desde o desenho à programação, da psicologia à matemática, da gestão à política, para além das áreas específicas de aplicação (CRUZ-CUNHA, 2012).

Refletindo sobre a importância crescente que estas aplicações evidenciam torna-se imperativa a compreensão da necessidade de que os jogos sérios têm, de proporcionar o entretenimento do jogador. O seu objetivo não deve ser a transmissão simples das estratégias de jogo no ensino/formação, treino ou transmissão de conteúdos, mas apropriar-se do aspeto de entretenimento e motivação dos videogames comerciais no sentido de envolver o jogador numa experiência que possibilite a melhor forma de conseguir o seu objetivo, seja ele a aprendizagem e formação, a promoção da saúde, bem-estar e recuperação física ou psicológica, ou outra entre as demais áreas dos jogos sérios.

Jogos digitais terapêuticos

Segundo o American Journal of Preventive Medicine (June 2012) [Fonte: http://www.ncbi.nlm.nih.gov/pubmed/22608382] no seu estudo sobre a relação do uso de videogames no aperfeiçoamento dos resultados relacionados com a saúde foram analisados dados que indicam que os videogames melhoraram em 69% os resultados as terapias psicológicas, 59% nos efeitos de terapias físicas, 50% na melhoria da atividade física, 42% nos resultados de educação para a saúde, entre várias áreas. Por esta perspetiva de análise poderemos afirmar que se trata de uma área relevante para a melhoria das condições de vida das populações e que merece uma atenção reforçada, ainda mais se analisarmos pelas circunstâncias atuais de que o investimento nesta área poderia conduzir a grandes poupanças financeiras na área da saúde.

para atingirem melhores resultados académicos; outro exemplo refere o aumento, em 15%, da força de braço dos pacientes que sofreram AVC e que jogaram videogame ou usaram ferramentas de realidade virtual nos seus programas de fisioterapia; verifica-se também que a simulação/treino de profissionais de saúde para situações de emergência médica, permitiu a diminuição, em 37%, dos erros nos cirurgiões que jogaram videogame pelo menos três horas por semana, em comparação aos não-jogadores, de acordo com um relatório publicado na revista Archives of Surgery.

**Exemplos relevantes de jogos digitais terapêuticos**

**Snow World (2008)**
Trata-se de um jogo sério baseado em realidade virtual para a diminuição/gestão de dor de pacientes/vítimas de queimaduras (Fig. 5). A ideia do videogame é sugerir através da neve, por oposição à situação em que as vítimas se feriram - fogo, uma situação que abstraia o paciente, diminuindo a dor. Através de estudos realizados comprova-se que a utilização do jogo durante e após o tratamento é muito eficaz na diminuição da dor dos pacientes [Fonte: www.engagedigital.com/blog/2008/11/14/snow-world-virtual-reality-used-to-treat-burn-patients]. Com o ambiente de realidade aumentada em que o videogame se baseia, o envolvimento do jogador é total, o que vem aumentar os níveis de sucesso na concretização do objetivo do jogo. Contudo, uma das limitações do jogo está associado ao facto de que é apenas utilizado em situação hospitalar pois um sistema de realidade virtual doméstico é bastante caro, o que poderá conduzir à diminuição da sua utilização quando o paciente abandonar o hospital, regredindo na terapia.

Este videogame (Fig. 6) ajuda adolescentes e jovens adultos entre os 12 e os 25 anos com depressão e ansiedade baseando-se no ambiente do Second Life em que cada personagem/jogador aprende a ajustar-se e resolver uma série de problemas sociais com que normalmente são confrontados na realidade.


### 3. Considerações finais

Centrado no nicho dos jogos digitais terapêuticos pode ser relevante para o seu desenvolvimento, a criação de parcerias e colaborações entre o meio académico e as empresas de videogames no sentido de se procurarem soluções e tratamentos inovadores para problemas da população em geral. Sendo ainda um mercado em desenvolvimento apresenta elevado potencial de crescimento ao qual pode ainda ser acrescentado o mercado das aplicações móveis, em grande expansão atualmente.

Partindo desta análise ao contexto actual dos jogos sérios, bem como da análise dos exemplos relevantes referidos, procuramos desenvolver um jogo específico para o tratamento de pacientes em reabilitação física, atribuindo grande importância à questão do desenho do videogame tendo em conta os fatores de motivação e de imersividade como pontos importantes para o tratamento, contribuindo para isso a opção de desenvolvimento em tecnologia de realidade aumentada e 3D.

Um dos principais problemas no êxito dos planos de recuperação/reabilitação física de um paciente prende-se com o facto de a repetição dos movimentos e exercícios necessários para cumprir o objetivo da recuperação se demonstrarem muito desmotivantes. Nesse sentido, a questão do entretenimento do jogador/paciente, envolvendo-o no jogo, poderá e deverá ser um fator importantíssimo para o desenvolvimento destas aplicações tendo como objetivo a sua maior motivação e, por consequência, à maior eficácia dos planos de reabilitação fisioterapêutica.
Para esse objetivo contribui o desenvolvimento dos cenários e personagens em 3D permitindo e explorando um relacionamento intrínseco entre o jogador/paciente e o “mundo virtual” que o envolve e as personagens que com ele comunicam diretamente.

Tendo a introdução do 3D nos videogames aumentado a interatividade da relação Humano-Máquina, a tecnologia de realidade aumentada veio exponenciar essa interação e levá-la para outros patamares, oferecendo como principais vantagens: o realismo das imagens; novas experiências e sensações para todos os utilizadores; a envolvência do utilizador com o ecrã; a possibilidade de navegar numa “outra dimensão”.

O trabalho futuro a desenvolver-se considerará um Game Design, Argumento/Storytelling e desenvolvimento de personagens que motivem o jogador/paciente na realização do seu plano de reabilitação fisioterapêutica. Para isso, o projecto irá suportar/contextualizar as atividades que os pacientes têm de desenvolver no seu plano fisioterapêutico num argumento apelativo e personagens que criem uma poderosa ligação social e emocional com o paciente/jogador, servindo-se para isso da realidade aumentada e do 3d para aumentar o fator de imersividade do jogador.

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Animação e Interação em Contexto de Realidade Aumentada

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Abstract
Este projeto explora o potencial de uma aplicação com conteúdos informativos animados, em realidade aumentada, para uma instituição 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. A realidade aumentada é usada neste projeto para ampliar e transformar a qualidade e quantidade de informação contextual relevante, disponível no espaço físico determinado para o estudo. Permite, como processo não invasivo no espaço no qual é aplicada, que a intervenção física seja pequena ou quase nula, e torna-se ideal para espaços de interesse público, mais particularmente edifícios protegidos. A realidade aumentada é uma tecnologia que oferece oportunidades para o desenvolvimento de vários formatos de animações, os quais podem tirar partido das potencialidades da combinação entre imagem real e imagem digital, no sentido de oferecer diferentes experiências aos utilizadores.

Keywords
Animação Tridimensional, Interação, Realidade Aumentada

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1. Introdução
Todos os locais contêm informação que define o contexto no qual se inserem. Através da utilização de um suporte mediador visual, pretendemos demonstrar que a animação pode ajudar a tornar bem-sucedida a relação entre um espaço cultural e aqueles que o visitam. Como espaço de referência para a construção das temáticas e conteúdos para a aplicação a desenvolver, escolhemos a Casa da Música por ser uma instituição relevante a nível cultural bem como pela heterogeneidade dos seus espaços, com uma variedade de características peculiares que os tornam singulares e apelativos. Foi realizado um levantamento das características dos espaços que potencialmente poderiam ser explorados neste projeto, tendo em consideração a diversidade e peculiaridade dos locais disponíveis da Casa Música. De entre as várias salas que compõem o edifício, foi selecionada a Sala VIP, um espaço privilegiado para jantares intimistas, ações para pequenos grupos e eventos cerimoniais [1].

1.1. Objectivos
O objetivo principal que se propõe consiste no uso da realidade aumentada num dispositivo móvel de modo a enriquecer ambientes específicos com informação adicional acerca do espaço. Procura-se desta forma proporcionar uma visualização dos conteúdos informativos através de uma experiência lúdica, com vista a melhorar a compreensão da informação do local, bem como contribuir para tornar a navegação na Sala VIP numa experiência mais dinâmica, associada à temática principal do espaço – a música. 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 [2]. É neste contexto, caracterizado por forte ligação entre criatividade e tecnologia enquanto mediadoras de comunicação entre um utilizador e um espaço, que incide a questão de como pode a animação contribuir para uma maior interação entre um utilizador e o espaço onde está inserido.

2. Conceitos Abordados
2.1. Animação
A animação é o ponto de central deste trabalho, bem como a sua relação entre a técnica e a estética no desenvolvimento das interações. É uma linguagem audiovisual, e ferramenta de comunicação que pode ser usada para transmitir informações [3].

2.2. Animação em Contextos de Interação
O desenvolvimento de aplicações em realidade aumentada necessita de otimização da interação entre o utilizador e o objeto, de forma a permitir que obtenha o desempenho máximo na sua utilização. Neste contexto a animação é predominantemente interativa, devido às características do suporte digital onde se está a inserir [4]. As animações integradas neste projeto estão directamente ligadas a processos de interação.

2.3. Realidade Aumentada
Realidade aumentada é um termo usado numa grande gama de tecnologias relacionadas que procuram integrar informação virtual com o mundo real [5]. Esta tecnologia permite sobrepor à imagem da realidade que vemos através de vídeo, informação textual, imagens estáticas ou em movimento, bidimensionais e/ou tridimensionais, e que podem ser interativas.

3. Processo de Trabalho
3.1. Personagens
Esta fase do projeto passou pela definição dos conteúdos visuais da criação de personagens (Fig. 1). O desenvolvimento de personagens é um processo que passa por um número de tarefas como o desenvolvimento da personalidade e aparência, idealmente são características que se complementam, facilmente reconhecíveis, e psicologicamente únicas – são os seus traços pessoais [6]. É a partir da definição do design das personagens que se segue a modelação 3D, depois de realizados os esboços, desenvolvi-
mento e seleção das personagens a serem utilizadas, estas foram modeladas digitalmente em 3D através do software Blender. Após a modelação 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.

3.2 . Conteúdos Animados
Uma vez modeladas e texturadas, as figuras passam pelo processo de rigging, no qual ganham esqueletos para se poder animar. Esta fase foi focada em apenas uma das personagens, pois foi esta que mais tarde foi animada e inserida no protótipo. Quanto aos conteúdos animados, decidiu-se previamente no storyboard e através de um estudo de expressões da personagem Clau, que emoções serão apresentadas durante a aplicação. Os estudos realizados mostram a variedade de expressões possíveis que poderiam ser utilizadas durante a aplicação. Durante o processo de animação tridimensional a duplicação de ciclos comportamentais é relativamente facilitada, são criadas as poses-chave do personagem (ao longo de uma determinada sequência), e em seguida são criados os intermediários que fazem a transição fluida de um extremo ao outro do movimento. Embora esta possibilidade de se poder reutilizar secções da animação e modificá-las seja um dos pontos fortes da animação tridimensional por computador, as personagens em animações interativas têm um repertório de comportamentos menos extenso devido a desafios de programação que assegurem o funcionamento dos padrões comportamentais em conjunto [7].

As animações (Fig. 2) foram concretizadas começando pela animação “triste”, em que o personagem se enche de ar e depois expressa o movimento com os olhos semicerrados enquanto ainda se encontra esborrachado no chão; a animação “contente”, em que as palpebras de baixo se fecham e as de cima se abrem ao máximo para mostrar exaltação; durante o processo de animação tridimensional o personagem mostra-se distraído enquanto rola os olhos e o corpo num comportamento de aborrecimento por não lhe prestar atenção; a animação “andar” mostra um andar um pouco a cambalear e a oscilar de um lado para o outro por causa da sua forma redonda; na animação “soprar” o personagem enche-se de ar e fecha os olhos quando tenta expelir o ar pelos tubos que se alargam quando o som sai; animação “saltar” acontece quando se encontra a festejar algum evento, a personagem semicerra os olhos e comprime e estica o corpo variadas vezes e rapidamente como num momento de exaltação; por último a animação “respirar” que mostra o estado normal da personagem apenas com pequenas movimentações que demonstram entrada e saída de ar de forma subtil.

3.3 . Protótipo
Como foi referido anteriormente 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. O protótipo foi desenvolvido em diferentes fases, começando pela interface, foi posteriormente adicionado o texto a ser apresentado e ainda o som que será reproduzido.

3.3.1 . Interface
A interface (Fig. 3) começa com uma introdução em que aparece o título da aplicação com notas musicais que depressa fazem um fade para as letras que compõem a palavra “Monstronomos”. A apresentação inicial desaparece e o ecrã mostra dois botões: o botão “Sair” e “Repetir”. O botão de repetição faz com que a aplicação volte ao seu estado inicial, logo após o ecrã de introdução. Quando a câmara é apontada para o marcador em questão, a personagem aparece no seu estado normal, quando surge interação a personagem mostra-se contente e é iniciado o jogo automaticamente. A personagem exibe sempre emoções em resposta às ações do utilizador. Durante o jogo são produzidos três sons diferentes pela personagem que depois aguarda que o utilizador os volte a reproduzir numa repetição sequencial dos sons apresentados anteriormente. Caso o utilizador
não acerte, o personagem mostra-se triste, o botão fica vermelho, e o jogo volta a iniciar, caso acerte na sequência, o personagem salta contente e muda para o modo de apresentação da sala através de legendas que aparecem na parte inferior do ecrã. As legendas vão aparecendo devagar para haver tempo suficiente de leitura mas é possível avançar depressa apenas com o toque no ecrã. Assim que é terminada a apresentação, é mostrada uma imagem que auxilia na exploração do espaço e posteriormente a aplicação volta ao seu estado inicial, sem passar pelo ecrã de introdução.

3.3.2. Conteúdos Textuais
Optou-se por selecionar algumas das informações que se considerou mais pertinentes, tendo em vista os objetivos deste projeto, e foram adaptadas para um nível de compreensão baixo e ainda com uma vertente lúdica para captar a atenção dos utilizadores mais novos. As informações propostas para apresentação na aplicação foram selecionadas por terem conteúdos que incitam à exploração e descoberta da sala em questão e por possibilitar a consciencialização de situações que não sejam passíveis de visualizar de imediato. Juntamente ao texto, para auxiliar nessas situações, é disponibilizada uma imagem caso a situação assim o exija.

4. Teste e Avaliação do Protótipo
Para a avaliação da aplicação desenvolvida no projeto, foi necessário submeter o protótipo a um grupo de amostra representativo dos potenciais utilizadores da aplicação (Fig. 4). Na observação indireta, o instrumento de avaliação pode ser um questionário, ou um guião de entrevista [8]. O protótipo não inclui toda a informação e estrutura da aplicação final, mas a suficiente para reproduzir com credibilidade a experiência de utilização da aplicação. A avaliação do protótipo permitiu colocar questões associadas à escala do ecrã do dispositivo, ao espaço de navegação do objeto e possíveis relações com as especificidades dos conteúdos animados, obter uma percepção de como será a aparência final da aplicação e fazer as devidas revisões do protótipo baseadas nas conclusões retiradas neste processo.

4.1. Amostra de Participantes
Jakob Nielsen, um especialista da usabilidade em sistemas digitais, defende que se pode fazer estudos apenas com cinco elementos de um escalão etário ou com um grupo de vinte em métodos quantitativos [9]. Mas mesmo num estudo pequeno, é necessário selecionar uma amostra aleatória o mais representativa possível da população a ser estudada [10]. Portanto para a sessão de avaliação foi constituído um grupo de amostra de 9 crianças, dos 6 anos aos 9 anos, esta amostra constitui um grupo de vinte crianças, num intervalo de idades entre os 6 anos aos 9 anos, de ambos os sexos, na qual foi possível reunir cinco de cada escalão etário. Esta
sessão teve como objetivo avaliar as funcionalidades e conteúdos visuais e sonoros do protótipo num grupo de indivíduos que representa o público-alvo principal para a aplicação, e foi seguida da implementação de um inquérito por questionário para avaliar os pontos positivos e negativos das funcionalidades e conteúdos visuais e sonoros da aplicação.

4.2. Análise e Interpretação de Resultados

Através dos inquéritos realizados procurou-se entender se os participantes conseguiam identificar claramente os conteúdos mais relevantes e se a interação com as funções da aplicação era intuitiva. Verificou-se uma ocasional dificuldade de leitura dos conteúdos textuais que se verificou incidir nos participantes com seis e sete anos de idade, diminuindo nos participantes de oito e nove anos. Apesar de se ter verificado a necessidade de aumentar o tempo de apresentação do texto, e fazer algumas quebras entre as frases para facilitar leituras mais demoradas, a situação referida manteve-se presente nos participantes de seis anos. Adicionou-se ainda uma opção de toque para disponibilizar aos participantes avançarem para o conteúdo textual seguinte considerando o caso dos adultos, por exemplo, que dispõem de melhor capacidade de leitura.

Para alguns participantes nem sempre era percutível o que lhes era pedido durante a experiência, mas com alguma orientação depressa se tornavam mais autónomos. A interação foi mais ou menos intuitiva, embora inicialmente todos os participantes tivessem esperado que o personagem se mostrasse ativo sem interagirem. Mas a interação com a interface não foi tão intuitiva como esperada pois a maioria das tentativas de interação eram direcionadas para a personagem, por isso foram adicionadas pequenas instruções para conduzir o utilizador no uso da aplicação. A atenção dos participantes, particularmente dos mais novos, focava-se principalmente no personagem, ao invés de se focarem nos sons ou nos conteúdos textuais o que influenciou bastante nas respostas obtidas. A componente lúdica foi muito importante para os participantes no geral, este elemento auxiliou no interesse das crianças pela participação na experiência. Outro fenómeno que considerei muito importante comparativamente aos mesmos utilizadores foi o facto de a idade ser uma forte influência na componente lúdica do projeto, os participantes de escalões etários mais elevados revelaram mais entusiasmo do que os escalões mais novos – esta situação parece corresponder com o facto de haver menos compreensão da aplicação que resulta em dificuldade, que por sua vez não alimenta o entusiasmo e sugere que a aplicação poderá ser também apelativa para escalões etários acima dos 9 anos de idade.

Concluímos através destas sequências de observação direta, que um ambiente descontraído é essencial para uma experiência bem-sucedida. Os elementos da amostra focam-se menos na figura do investigador e na reação que as suas ações provocam nos outros, focando-se mais na experimentação da aplicação em si. A interação tornou-se mais intuitiva, não dependendo tanto de auxílio na experimentação da aplicação, tornando-se assim um mundo completamente descoberto por elas próprias através de tentativa e erro. Apesar de esta ser uma situação ideal, ao invés de ter utilizadores individuais, as crianças demonstraram à mesma vontade de cada uma delas experimentar a aplicação individualmente pois perceberam que a experiência não é igual se apenas for visualizada, a visão subjetiva e o próprio toque no ecrã foram importantes para sentirem maior empatia com a experimentação no protótipo.

Numa visão geral podemos afirmar que a idade auxilia na destreza e na naturalidade ao lidar com determinadas situações e objetos, e também pode aumentar o entusiasmo da experimentação de situações novas. Percebeu-se a importância de as personagens virtuais terem a capacidade de se sobressair nos aspetos relacionados com a jogabilidade, e que pudessem comunicar e relacionarem-se emocionalmente com o utilizador.

5. Conclusão
5.1. Notas Conclusivas

O corrente estudo procurou analisar o panorama da utilização da animação no contexto da realidade aumentada, estudando as suas diversas formas e suportes. Neste sentido, este foi desenvolvido para que fosse passível de ser experimentável em dispositivos móveis, e procurando que seja apto a ser utilizado por um grupo alargado de utilizadores individuais. Neste projeto foi particularmente explorada a contribuição da animação para uma experiên-
cia mais envolvente e lúdica, procurou-se criar uma animação que desafiasse o utilizador, levando-o à busca de mais informação através da interação com esta. Foi então explorada a participação da animação na composição de uma aplicação e estudado o papel da personagem, em situações que a aplicação solicita interação. A personagem é um veículo que transpõe essa interação para levar o espectador a responder e criar uma ligação com os conteúdos apresentados. Teve-se em consideração a necessidade de procurar novas formas de interação com o espaço envolvente, com esse intuito procurou-se cruzar desenvolvimento de personagens com estímulos visuais e formais dos instrumentos.

A incompatibilidade de programas por vezes leva a repensar o trabalho e a procurar soluções fora do planeamento previsto. essas foram consequências de limitações na utilização dos software, mais especificamente na transição de elementos gráficos entre estes. Uma situação que mudou consideravelmente a abordagem foi a opção de utilização de marcadores no espaço que passou a ser a melhor opção de implementação devido às limitações que o reconhecimento direto do espaço levantou. Um dos principais desafios encontrados foi a transferência da personagem para o ambiente de realidade aumentada, que consiste em problemas como a adaptação das texturas e da cor, refletindo-se na reprodução das animações realizadas. Procuramos assim permitir ao público uma interação lúdica e informativa, com personagens animadas autónomas que nos permitem saber mais sobre um espaço, sem a dependência de um guia, ou vinculação a uma visita guiada, e de um modo pouco invasivo que não interfira (física ou visualmente) com as características arquitetónicas do local visitado, acentuando ainda um incentivo à exploração - de interface, do espaço, das personagens e dos seus sons - que sublinham e nos imergem no espaço contentor de sons que a Casa da Música representa.

5.2 . Contributos e Perspetivas para Trabalhos Futuros

A aplicação desenvolvida, aliada aos conhecimentos teóricos adquiridos do projeto apresentado pode constituir um ponto de partida para outras investigações, no contexto da produção de conteúdos criativos para realidade aumentada, já que contribui com uma experiência metodológica e empírica sobre a qual se podem evoluir trabalhos futuros na área. Finalizamos o projeto com a expectativa de ter contribuído para a valorização desta área, na qual percebemos haver potencial, com muito a ser explorado, e com grande aceitação em públicos de todas as idades, com mais incidência em camadas mais jovens.

Referências

EXPERIMENTAL ANIMATION a reflective-creative inquiry

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Abstract
This paper reflects on the teaching-learning experience offered by Experimental Animation as a creative inquiry within the academic study of Design. It discusses the insights I got when I followed the students’ footsteps (through class discussions and interviews) in their creative process and collected the bread-crumbs left behind to connect the dots. This paper also reflects on the idea of experimentation (perception, philosophies and processes) in animation and how it opens up new windows of understanding and appreciation of the medium and points towards new possibilities in the practice of animation.

Keywords
Animation, Experimental Animation, Design Process, Narrative, Characterization, Non-Narrative, Abstraction.

1. Faculty, Animation Film Design, National Institute of Design (NID), INDIA
Introduction

This paper emerged out of the students’ interviews that I conducted during a course on Experimentation in Animation and Films for students of Post Graduate Diploma in Animation Film Design at National Institute of Design (NID), India.

Animation, as a medium of storytelling, communication and pure artistic expression and experimentation, has had a unique journey for more than a century. From being an alternative to live action cinema and a medium for children’s entertainment to becoming “a choice of the avant-garde, a modernist language and the height of experimental cinematic achievement” [01] to being recognized as “the most important art form of the 20th century” [02], animation’s identity has been under constant metamorphosis.

Animation and Film have been the most popular and prevalent mediums of mass entertainment worldwide beyond the boundaries of language and culture. The mainstream animation features and animated television series, produced mainly in the animation studios with commercial interest and targeted at wider audience, have significantly shaped the collective conscious experience and understanding of animation as a product of industrial process aimed at popular entertainment. Scholarly study of animation is yet to be given its due space in universities and art-design institutes globally. The current academic study of animation is predominantly oriented towards learning of animation as a medium of storytelling for mass entertainment and communication rather than as an art form in its own right.

A course on Experimental Animation and Film provides a venue for the students to consciously break the boundaries of conventional practice of animation and develop a different approach in the process of animation making.

Following an experimental approach in design of an animation offers an opportunity to the students to question and critique the traditional understanding and practices in the medium, leading to the broadening of their perspective about animation.

This paper discusses my findings and insights that I gathered while closely following the students’ creative process as well as interviewing them and discussing with them during the course.

Act 1 - The beginning confusion --> excitement

For most of the students it wasn’t an easy beginning. Confusion was a common feeling. But some of the students found it a liberating experience as it offered a playground to break the rules and limitations that come with traditional practices in animation. It was all about breaking the boundaries of one’s own perception about animation what one had experienced and practiced so far.

One of the students referred to it as the breaking of the way in which the visuals had been perceived so far. Their understanding of the graphic possibilities, that animation offers, also expanded and affected the students' creative process and the final outcome.

Some of the students began with some thoughts and concepts while some others recalled their immediate or distant past experiences. They consciously avoided the narrative route. This unconventional and unstructured approach worked as a breather for the students and opened up an altogether different pipeline for animation making. Originality and newness were common elements in students' creative approach and intention and paved way for them to find materials, techniques and forms that fit with reference to translating of their subjective experiences into animated films.

The excitement in the students came more from the possibilities in the medium rather than the story or the concept. For some of the students experimenting in the medium involved going beyond the limitations that one has in terms of skills. The freedom to choose from a variety of mediums and materials was a way to overcome some of those limitations but at the same time it was a way to search for a bridge connecting their thoughts and feelings and their translation into visuals and sounds. Gradually the excitement took over the confusion and the students proceeded with an expectation that they would stumble upon something new, original or different on the way.

Act 2 - The process

Mediums, Materials and Forms

As the students were not thinking in terms of stories, characters, messages or communication objectives, “techniques, mediums and materials” took precedence in the beginning of their creative process as most of them started with translating their thoughts
and imaginations into material explorations e.g. textile (Fig.2), food colors, paints on water etc., sometimes even without a trace of a thought or an idea of a narrative.

Breaking away from developing a structured storyline opened up a way of looking at every idea as a potential candidate to be translated into a cinematic exploration. The dreams, experiences and reflections on day-to-day life became a source of thoughts to be translated into visual explorations in different mediums and materials.

One of the students felt the conventional process of animation making as stagnant and mundane with limited opportunities of innovation and creative satisfaction. He felt that experimentation is about having a regard for the “process” but always trying to go beyond the “standard”. “Non-linear” approach was given a preference over “linearity” in the “process” and it was suggested that one can begin thinking about the “medium” and the “concept” simultaneously as two parallels that can cross their paths somewhere ahead in the creative process. The medium wasn’t just serving the narrative or the concept anymore but their separate existence led to more options in terms of exploring the “vocabulary” that mediums and materials themselves had to offer. The choice of medium and material was also thought to be a deciding factor in expression of one’s thoughts or communication of one’s ideas and some materials and mediums were found to be effective while others didn’t seem to work.

Some of the students approached other Art Forms like Indian Classical Music (Vocal) and Indian Classical Dance (Bharatnatyam) to inform and enrich their aural-visual vocabulary so that they could approach the “non-narrative” and “abstract” in their own animation practice with more clarity and creative possibilities. One of the students explored the Mudras (gestures) and Bhavas (expressions) in Bharatnatyam (an Indian classical dance) while the other began her experiments looking for possibilities in the system of Indian Classical Raagas (melody). Some thoughts and discussions took a turn towards aesthetics and visual composition and one of the students felt that the animated explorations not necessarily have to be “pretty” or follow the cliché of a structured narrative.

Students’ ideas of exploring beyond conventional mediums e.g. drawing, cutout, claymation, was not only a way of overcoming some of their own limitations in terms of skills but also was intended towards finding “new forms of expression” in a dialogue between the “medium” and “concept”.

The students also experimented to a great extent with “abstraction” exploring colors, forms and movements and tried achieving a sense of “musicality” in their animated movements. They explored old and new techniques e.g. cutout, software (animation, image editing, compositing) and Apps with same enthusiasm and intrigue. It proved to be an open venue for them to incorporate as many techniques and methods to achieve new outcomes. For most of the students experimentation began where old set of constraints (narrative, characterization, communication, continuity) were gone and new set of constraints (non-narrative, abstraction and material and medium interaction and exploration) came in. Breaking away from the mold or the structure created a void initially and brought significant amount of confusion in the students but at the same time it opened up avenues to search for new creative possibilities. It was also felt that this “feeling of being lost” is essential to jog one out of the norm and help one to ask questions and find ways. Experimentation was thought to be about “shaking things up and mixing things up and to do things the non-conforming ways”.

The whole experience was also referred to in “metaphorical” terms. Sometimes experimentation was like “a blank canvas where one can choose what paint one wants and can go to it” while some referred to it as “a child’s learning ground to walk”. For one student experimental animation offered an opportunity to create one’s own set of visuals and ideologies, something that one
doesn’t see happening everyday in one’s creative practice within conventional boundaries. It was felt that one doesn’t need to tell a story every time to make sense and experimentation in film and animation offered a widening of perspective about the medium and created a window to go “poetic” in one’s cinematic exploration.

Another student felt that experimentation in animation offered a chance to be “wrong” and offered a break from always figuring out the logic to make things “right” in terms of communication objectives or telling of a structured story. She felt that experimentation offers another dimension to one’s work in animation and is a way to create something distinct, like a signature, relating to one’s own thought process and personality as she mentioned that some ways of thinking and creating come to someone depending upon what kind of person one is. Some of the students were of an opinion that one can make an animation just for oneself, purely for self expression and without any communicative function. One student also felt this way of film making as sharing something personal and opening of a window providing an overlap of personal spaces between the audience and the filmmaker. Experimentation in film and animation was also considered to be a “visual discussion” with the audience and a way of sharing one’s feelings that one comes across walking the streets one inhabits.

Another student believed an experimentation to have a clear “conceptual” aspect apart from exploration of mediums, techniques and materials. He didn’t begin with an idea of the final film or a story but limited his experiments to a “framework” where he explored cinematic devices (like flips and loops) as an attempt to understand how these techniques and devices work and affect the final cinematic output as well as the viewers’ reaction and experience. Another exciting aspect for the students in the process was about expressing or communicating complex ideas, something that one comes across in one’s life, through the medium of film and animation.

One student felt that we have an access to a much wider variety of tools and techniques nowadays and the possibilities of experimentation in film and animation are endless so it all begins with one being open and willing to try new methods and processes beyond conventional practice. For one of the students it was not just about materials and mediums and meaning making but exploring new “ways of looking” and “ways of deciphering a visual” was an experiment in itself.

As the students proceeded in their creative process the sense of “wonder” gradually took over and “clarity” emerged as students moved from trying out different mediums and materials (putting colors in water to spraying paint on canvas to trying brush strokes (Fig. 1) to placing the camera at some point and recording) to a conscious attempt of constructing an idea and creating a work.

For one student experimentation was a platform to explore the realm of “abstraction” with sounds and music through a playful approach towards the “form”. For another student experimental animation was a “new way of looking at the world and the medium”. It was a territory that she hadn’t entered before. Initially she couldn’t accept the idea of films freed from “purpose and meaning” and she had a “fear” of not being able to make something that is not “deep or meaningful” enough while she was experimenting with the medium. But once she got rid (consciously) of that “pressure” of “meaning and reason” she started enjoying the freedom of choices, in terms of materials, mediums and techniques, and started having “fun” with just the forms and colors and movements in her creative journey.

Another student felt that animation’s role is to express the thoughts and feelings that lie beneath the surface reality and exist beyond everyday experience of actuality. The student also felt that there is a strong connection between the act of film making and the willingness of the filmmaker to talk about things that she/he believes in or has seen or experienced.

F.2 Some of the final frames from the animation film “Friendship” by Akashdeep Sonkar (student)
Act 3 - the culmination

The students strongly correlated experimentation with freedom, artistic, subjective, personal, individual, auteur and signature. This course was taken as a platform to engage in a critical discourse about the language of animation and to try out new materials and techniques leading to new creative output and new understanding of animation as an art form. The freedom from the conventional character-centric-narrative-fiction approach paved way to go back to one’s dreams, perception and experiences of day-to-day life as playgrounds to engage with animation as an artistic tool for expressing one’s thoughts, ideas and philosophies.

One of the students felt that experimentation in animation is a way of shaking up the norms and breaking away from conventions to find new creative possibilities in the current practices in animation that has reached a plateau.

At the same time the idea of experimentation in animation and film wasn’t embraced without skepticism and the oscillation of thoughts between art and functionality, individual expression and communication and form and content never ceased to exist. This dilemma led the students’ creative processes in different directions and thus each student experienced the process differently. Some told a story but explored unconventional approaches while others completely moved away from any kind of storytelling or communication and had fun just playing with the materials, mediums and techniques.

In the end all the students found the experience to be enriching in terms of having explored something new and different in the diverse vocabulary of language of animation.

Conclusion

It was very intriguing for me to see how the students’ perspective about animation’s artistic-expressive nature broadens once the students move beyond their conventional understanding, experience and practice of animation as primarily a medium of storytelling and communication. When animation is looked at outside the framework of its narrative-communicative function then it’s true artistic possibilities come to the foreground. When one begins to explore other aspects of the language of animation e.g. creative possibilities in materials and techniques, new forms of expression emerge. The making of artwork itself takes the center stage and it becomes self-reflexive, leading to an artistic experience of its kind. The non-linear approach in experimental animation where Form and Content (story / thought / concept) journey independently (to possibly culminate at some point in the creative process) opens new possibilities for the animator to have a more enriching experience while exploring "animation as a versatile language that can speak in many tongues". [03]

For some students it was pure experiment with the medium while for others it was an opening up of a different pipeline of animation making. Some found it to be an artistic endeavor or while others simply had fun playing beyond conventional boundaries. But everyone was, to certain extent, able to look at the medium through a different lens and could experience the immense creative possibilities that animation offers.

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The wind turned into animation character

M. Carmen Poveda

Abstract

The depiction of sequential momentum in children’s book illustration is a form of visual communication where the artist takes a positive role in expressing narrative ideas, a role which has many similarities to the role of director. Sequential momentum is an expressive visual device that animates the narrative; it is primarily a visual tool, which is effective in depicting movement, drama and time in a static medium.

In order to analyse the complexities of this, the paper will break down the notion of sequential momentum into three components and discuss how these components feature in the work of several prominent author-illustrators. The first of these components is action: the momentum of the image and the expression of frozen kinetic energy on the page. The second is time: how the image depicts a single moment or multiple moments in time. Lastly, the discussion turns to drama showing the intensity of the moment and the theatre of imagery that exists on the page.

One might assume that expressing sequential ideas, through what has been referred to as a ‘discontinuous medium’ (McCloud, 1993), could be inhibiting, however expressing a moving story through a static medium demands a focus of conceptual direction by the artist. It challenges the artist to identify the very essence of an idea and then to express that idea using a multiplicity of graphic codes that iterate and reiterate the notion of momentum. The fictional world of children’s books provide temporality and causality, where the audience can engage in expectations and an imaginative journey, which in the process of comprehension, is transformed into motion and becomes continuous.

Keywords

Picturebooks, illustration, temporality, closure.
1. Introduction

In this paper we address the difficult task of creating a mute character without human appearance. Specifically describe how it was created and animated the wind for the short film A piece of wind. The character, in any of the arts, usually behaves similarly to the way a real-life individual, but not always looks human. If you add to that the character does not speak, the expression of life during his performance is a difficult and very demanding for the artist. The human body has the ability to complement the verb indicating consciously or unconsciously what the individual feels and thinks. The face and hands are the principal responsible for such non-verbal expression. When the character are not a human form, the animator has to strike a metaphorical or symbolic gestures such human, relying on other resources such as sound or color. What is the origin of this study? This study seeks to find new forms of body language and get an abstract, almost no volume graphics, get the viewer convey feelings and actions of the human being. The solutions presented here are valid but they are not unique, they are simply personal ways of solving the problem, as Russian actor Stanislavsky (1863-1938) asked his student drama classes, “You are here to study, to observe, not to copy. Artists must learn to think and feel for themselves and find new forms of expression” (1).

The reason for choosing the wind as a character is that this element of nature does not have a perceptible body in real life, only in times of maximum drag force elements such as dirt or leaves being so noticeable at a distance. Being that we’re working on character animation and not another artistic discipline, we must not only think about how an image but how they behave over a period of time. This was explained the Scottish animator Norman McLaren (1914-1987) during his interview with J. Baquedano: “The animator, more than any other movie maker, notes that what exists on each image is never as important as what has happened between images” (1).

2. Antecedents

The wind has been an essential element in many animated shorts. Sometimes appears so discreet in the film as an element of the set, as a single agent goes very unnoticed atmospheric. But sometimes plays a role in the script. In these cases the wind is used by the animator as a graphical tool to convey an idea or a feeling. We choose three short films that apply these ideas and then discuss.

2.1. L’homme qui plantait des arbres (1988), animated by the canadian artist Frédérick Back

In this case the wind is not a proper character as lifeless own but their role is very important in the film. Frédérick Back uses the wind as a link in the various events that occur during a period of time. In the film we see two distinct parts. The first is described as a desolate space, sad and abandoned. In the second part we see a stage full of life, vegetation and color. Both in part and in the other, the wind stirred tackles the characters and elements of the stage. If at first strengthened the message bringing desolation sand and soil of a barren land, in the second part is the same wind that favors the expansion of the vegetation, filled with color and life space.

2.2. Paroles en l’air (1995), animated by the french artist Sylvain Vincendeau

Vincendeau Sylvain’s film does not use the wind as a character but as in the above cited is an essential element in the script. We see throughout the short the successive attempts of the central character for contact with a girl who lives in a nearby house. With windows facing the protagonist tries again and again to get a message written on a sheet. To which the girl read it builds a plane sheet of paper with written but the wind is in your favor and messages just getting into the homes of other neighbors. In this case the wind lacks corporeality. We know that is present through the paper airplane moves through the air. Only when it takes a lot of force on a tromenta can appreciate through clear lines on a dark background. Again marks the resource to give transparency when a gentle breeze and opacity when acquired great strength in their movements.

2.3. The wind subsides (1996), animated by the german artist Vuk Jevremovic

The latest short film we considered interesting to analyze is the German animator Vuk Jevremovic. The wind subsides the first short film was made and is an experimental film which highlights
the use of painting within the animation. Throughout the film we see the continuous displacement of a leopard suffers various metamorphoses, color changes and textures. In this case the feeling of speed and tension leading to the rapid run of the animal is enhanced by the action of wind, that accompanies continuously. Jevremovic uses wind similarly to as did Frédéric Back, as an element that reinforces an important idea to convey in the film. If Back is used to express desolation and life at different times in the film, Jevremovic uses it to generate tension and increase the sense of speed in the viewer.

3. Wind study

Let us return to the film A piece wind and with it the creation of the character. Before that we encourage you to define both in appearance and in personality. A key feature in the design would be its lightweight nature. the wind moves similarly to as does in real life. But what would we do without words to express your mood or feelings?. How was resolved using the resources of color, texture and sound. This was a particular decision because there are artists that refer to elements of reality in a metaphorical or symbolic, even creating its own language away from the actual design. In our case we would keep some of the properties of real referent: lightness, low visibility and resizing. It was decided to create a character based on spots with different shades and textures. By the time the character emotional state change during the movie, the scroll speed, tone and texture of his body altered.

The character in their behavior uses the body language of real individual, therefore we must find a way to express emotions, as explained by the American animator Preston Blair (1908-1995): "Once defined the emotion will express the character must explore every possibility of movement seeking more expressive and clear solution "(3).

Once defined the character in its static stat we need to find solutions to represent different animated character behaviors. During the film, the wind has different states: the beginning is calm and distracted, relaxed walking through the woods. Then is very angry and aggressive, coming to attack the character of the girl. Once you have managed to contain his fury, the girl asks him to return an object belongs. When she refused, the wind tries to snatch it hard, pulling her. Let’s see how they solved each of these situations.

3.1. The wind is calm and distracted

At the beginning of the film, the wind appears on the scene as a quiet and peaceful character. Stroll through the woods distracted without realizing that a person, hidden under a tree, steals a piece of your body. Being relaxed, wind represented a very soft spot faded chalk a very clear tone, with poorly defined boundaries. There was no texture or contrasting tones. In the performance, it was decided that this tranquility would manifest through slow movements and a very smooth animation. This would be combined with fades in the assembly of the post, to emphasize this slowness of movement.

The peacefulness in this case is represented by a property: Movements slow. When a person is calm and relaxed and not making sudden movements quick, usually. The same applied to the wind, moving very slowly, like a gentle breeze.

![Fig. 2. Stills from the film A piece of Wind (2005), by M. Carmen Poveda](image)
3.2. Second behavior. The wind is aggressive and violent

After the wind finds have removed part of his body, looking for furious and angry to the person who has stolen. When he finds it hard lashes attacking from behind as she endures the onslaught hunched over herself and crouched on the floor.

The fury of the wind is represented by dark lines and highly textured. Wind body darkens and gains in roughness and nuances. Its outline is now much more defined than in the previous state. In terms of the behavior, we have solved the fury with very fast movement of the mass of the character. Mass also increases in size. Along with the look and the movement is the sound of wind which increases the feeling of strength. In the former case the wind moved quietly.

3.3 Study of the behavior of the elements that appear in the short character interacting with the Wind

Once defined the appearance and behavior of the wind, we need to study how they are affected touch objects in its path, especially when it takes a lot of strength. If we observe what happens in real life we see that objects are affected to a greater or lesser extent depending on their weight and flexibility. Who or what wind interacts objects?. With the girl’s character and nature that grows in the forest that is the scenario. Consider first the character of the girl. In this character we have several elements that move with the wind: the body, hair and dress fabric.

What are the linkages with the real gestures? In this case also the speed is taken to indicate the shift feeling. But we have also implemented another gesture: color. When a person extremely angry, his face reddens and therefore your skin becomes darker, as explained by the naturalist Charles Darwin (1809-1882) in his study of body language: "In the anger, the heart is accelerated slightly. The face color intensifies. The glance is bright and stands firm. The breathing quickens. The flaps of the nostrils dilate. The mouth is closed tightly as the brow wrinkles (5)."

4. Conclusions

The first conclusion from this study is that we can create a character without human appearance. That is, it will behave as an individual with a personality that is designed in preproduction but with the peculiarity that their feelings and actions will manifest...
The wind turned into animation character

M. Carmen Poveda

9. Halas, John.: La técnica de los dibujos animados, Barcelona, Omega (1980)

differently than it does a person, lacking physical features as expressive as eyes, mouth or hands. Instead off, it is very interesting to find out, as commented Stanislavsky, new forms of expression, in line with the special nature of the character. These forms of expression will refer to the natural human gestures and everyday behavior, because after all, the viewer has to understand what the character feels and thinks. There are many studies on the expression of the human body, of which we highlight the work of Charles Darwin as a scientist and Le Brun as an artist and whose legacies are an invaluable source of study for the animator has to give life to any character.

The second conclusion we have reached is that there is no single solution to the problem we proposed. This problem remember that was to get something as abstract and undefined as the wind got convey to the viewer that had personality and communicate that he could feel, think and act like the rest of the characters. It was not easy, but we have achieved it due to a study of the appearance and changes in color, texture and size. Now this is a particular way of solving the problem of bodily expression. There are many solutions as animators and all equally valid. There are thousands of ways to express joy, sadness or anger. Each animator solves the animation based on what you know and especially in terms of their personal way of expressing this sentiment. It is inevitable that the animator when making animations, leave its mark as the painter or sculptor does in their respective works.

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Abstract

Storytelling in computer games is a subject on which many researches have been done throughout the years. With the technological development in rendering and animation techniques, the cinematographic approach to storytelling in games also improved dramatically making games stand closer to cinema. Therefore, we decided to analyze 7 movies to see if any alternatives left which games designers can borrow from cinematographic representation. As a result of our analysis we came up with 8 guidelines holding potential for enhancing the story telling in games. Our research showed that, the techniques used in cinema still have clues for storytelling in games and further researches will be useful for improving the quality of narrative in interactive stories of digital games.

Keywords

Storytelling, Narrative, Computer Games, Movies, Cinema
1. Introduction

Storytelling in computer games is a subject on which many arguments have been emerged throughout the years. While some researchers claim that the games and storytelling are different domains and games does not have a pure story telling [1]; many other researchers believe that; we need to focus on how to enhance previous narrative experience in the game content. Above argumentation between gameplay and storytelling, mostly arises from the iterative nature of gameplay and the cut scenes (non-interactive parts which interrupt the game play for the sake of the story) which spoils the immersion of the game [2]. Although these problems exist, game developers have not left using cut scenes or telling stories in other ways. Moreover, current visual representation techniques improved by advanced technologies which provide many opportunities such as more realistic rendering, better realtime animation and sophisticated visual effects. These improvements result in more realistic and immersive storytelling sequences in video games.

Cut-scenes, being the main elements for expressing the story in the background, are likely to adopt camera movements, shot selection and framing from the cinematographic techniques [3]. “Point of view”-looking angle to the outside world which is defined as first or third person- also changes according to the camera angles as it is in the cinema [3]. In addition to these two, narration with motion is another mutual point of video games and movies. These three subjects are mostly experimented and developed in cinematography long before. Therefore we believe that there are still alternatives left which game designers can borrow from cinematographic representation.

To improve this hypothesis, we have selected 7 movies of which their narrative structures and techniques have potential to be transferred to interactive stories of the computer games. The first three movies are Three Colors: Blue, White, Red [4] provides a genuine structure which makes unconventional relations between the movies of the trilogy. The forth movie, Run Lola Run [5], and the fifth movie, Sliding Doors [6] have stories branching into different story lines which can be named as “tree structure”. “32 Short Films about Glenn Gould” [7] has a web structure [8] which is an unorthodox method holding a potential to be an inspiration point for interactive structures. And finally seventh movie Baraka [9] is chosen since it does not use any voice-over narration and express the information with only visual and audial composition which can be related with iterative sequences of the games.

The analyze method of ours are based on narrative structures and narrative techniques used in the movies. Narrative structures vary into several different types which are named as Dramatic Arc, Kishōtenketsu, Hero’s Journey, Hollywood and Robleto [10]. Dramatic arc, is the most known and used structure being defined with three main stages called “Rising Action”, “Climax” and “Falling Action” in Freytag’s Triangle. In dramatic arc, “rising action” is the part where characters are introduced. In “climax”, the problem is explained and the “falling action” is the part which the problem is resolved. This structure can be a reference to even the most complex stories [11]. The movies chosen do not convey the traditional structures; however their complex forms of narrative structures can be explained by using terms of dramatic arc as it is done in this paper. After defining the structures, we will try to explain the narrative methods which makes possible to survive in these kinds of structures to see if they are sufficient for creating guidelines for the interactive stories of computer games overcoming the problems like interruption of the gameplay for the sake of the story. By this method, the guidelines for advancing the narrative in branched stories are also proposed in the paper finally.

2. Unconventional Ways to Tell Stories

The trilogy of “Three Colors: Blue, White, Red” considered as the masterpiece of the Kieslowski includes the first three movie as mentioned above. The first movie of the trilogy, “Blue”, is telling the story of “Julie” and dram after her husband dies in a traffic accident. In “White”, a Poland Citizen Karol, his girlfriend and the tides of his life between France and Poland is the case. The last film of the trilogy, “Red”, introduces us Valentine who is a student and a model in Geneva and depict the story between her and Kern who spies into the phone calls of citizens. In each movie, independent stories of different characters are narrated in a linear fashion. However, non linear structure of whole trilogy which connects these different characters to each other is the most exceptional side. The sequences where the characters in each movie
come across, are placed in the plot of the trilogy in a way which makes the spectator create a link between movies in their mind. One of the scenes which takes place in a court can be given as an example for the sequences in that appearance. “The court scene” appears firstly in “Blue”. The scene shows Julie being stopped by a courtroom staff while entering the wrong room incidentally. At this moment, the defense of the defendant is heard in a foreign language which is translated by a translator to the French. The same scene is repeated in “White”, showing Karol, the main character who is Polish, defending himself, making us realize that the defense which we heard in “Blue” belongs to him. Soon after, we see the Julie who is stopped by the courtroom staff. Plot here makes us think that we saw the movie before. This confusing moment, immediately evokes our mind to create a bond between two movies, although there is not any direct connection in the stories. The method used is worth attention to understand an authentic way to connect different chapters or sequences. To simplify, showing same events from the different point of views or from the eyes of different characters can be used for creating links between chapters and sequences.

Apart from the court scenes, there are other obvious, yet indirect scenes which connect the three movies to each other (Fig. 1). In these scenes, an old person tries to throw a glass bottle into the glass bin. All three movies have the same scene, nevertheless in each movie a different part of the story is narrated. In “Blue”, the old woman tries to throw the bottle; however she remains incapable of reaching to the hole of the glass bin. The main character, “Julie”, realizes the old woman when the sunlight reflected from the bottle disturbs her eyes, anyhow she chooses to remain indifferent to the situation. The climax of this short story takes place in “White” when the same process is iterated by an old man with the same result while the Karol, unlike “Julie”, watches him and gives an emotional reaction by smiling at him. The very same scene reaches to the end in “Red” when the glass bottle is eventually thrown to the glass bin by the help of Valentine. The process in these scenes, unlike the main plot, is directly related with each other in all movies of trilogy. The completion of the process in “Red” gives the message that we are watching the last movie of the trilogy. The technique used here can also be a guideline for linking the different chapters and sequences. Placing a short story which is indirectly related with the main story line while progressing all along the chapters or sequences can be a way for linking these different chapters.

The fourth movie to be examined is “Run Lola Run” which is an art house classic. The movie tells the story of Lola who needs to find 100,000 Mark in 20 minutes for his boyfriend. Narrative structure of the Run Lola Run is separated into three different story lines and these 20 minutes are told for three times in the movie by rewinding it to the beginning and telling the story with different progress and endings. The story is changing in each cycle depending on small differences in Lola’s actions. For instance, in one cycle she hits a woman while running and in the other cycle she passes by making the story change. The same method can also be used for games in which more than one story line is available. Current games divert the story into different directions with conscious decisions just as killing a character or leaving him/her alive. Other than that, a game named Heavy Rain [12] proposing a story line which continues even if one of the characters dies along the way. It also promises the failures in quick time events affecting the story letting it continue with this impact instead of ending it. Nevertheless, although the system seems like having a potential to be divided into abundant number of story lines, the possible outcomes are not varying as expected [13]. Therefore, making “failures in timing” or decisions which seems unimportant affect the story may enhance the narrative in games.
Run Lola Run hosts also unconventional narrative techniques for telling the story of the people who the Lola comes across while running without disturbing the pace of the story. When Lola passed the certain characters by, the main scene is interrupted by still images which are presented like a fast slide show. These photos tell the stories of the side characters in a very brief moment without interrupting the pace of the action. It also breaks the routine of the scene where only the running action of Lola is shown. As a guideline principle it can be said that the implementation of other do- mains which narrates a story in such a brief moment can be used for storytelling without interrupting the immersion of the gameplay sequences.

One more aspect of the movie which should catch the attention is the scenes where it turns into a cartoon. Beginning of each cycle, while Lola is passing her mother’s room, camera zooms into the television which Lola’s Mother is watching. In the television, we see a cartoon showing that a red haired girl (actually she is Lola) is running down the stairs. The scene makes the spectator question the reality of the events taking place in the film. As being a transition between the inside of the house and the outside, these scenes also seem like the transition between reality and imagination. It is also an example for transferring from another domain for enhancing the narrative without adding any extra text or voice-over.

The sixth movie, Sliding Doors, has a narrative structure similar to “Run Lola Run”. The climax of the story starts when Helen misses the subway. At that point, the story is divided into two branches, one of which is advancing as if Helen did not miss the subway while the other branch tells the real story where Helen misses the Subway. Although the structure is similar with Run Lola Run, in Sliding Doors, two branch of the narrative structure is presented at the same time instead of telling the whole story from the beginning. The transitions between these two storylines are usually so sudden; however with the use of certain symbols like Helen’s distinctive hair styles which are changing in each storyline, the possible confusions are prevented. It is an exceptional point for making such scenes, which can confuse the perception of the spectator, more understandable. Confusions which are resulted from the sudden transitions between different states can be overcome with the help of certain visual symbols.

These two movies were using the tree structure to tell their stories. Another movie, we examined, 32 Short Films about Glenn Gould, is progressing along on a narrative structure defined as a web structure [8]. Movie is composed of 32 short films which constitutes the biography of Glenn Gould in an authentic way. Looking to the main flow of the movie, it can be said that there is a chronological order, beginning from the childhood of Glenn Gould, continuing with the period when he decides to start radio broadcasting and ending with his lifetime after he decided to quit giving concerts. However, being a property of the web structure, there are scenes which are completely outside of the main flow and also different in the aspect of narration style. For instance, the scene named as “Diary of One Day”, where we watch the skeletal movements and other body functions of Glenn Gould while playing piano as if we are looking through an “x-ray device”, informs the audience about a day of Glenn Gould by showing the notes about medicines he took and his “blood pressure” in specific times of the day. Iterative actions in the scene are presented in unconventional ways such as showing the body movements in the
x-ray view instead of a normal view. The doses and the names of the medicines are expressed by interrupting the action for brief moments. Interval between these interruptions changes according to the rhythm of the music. All these composition integrate narrative into the repetitive action of playing piano. As it is done here, narrative can be implemented into the repetitive sequences of the game play by using unconventional imagery and composition which is in harmony with the music.

Another property of the narrated story is how the structure is related with the personality of the Glenn Gould. The Glenn Gould built his career on the unconventional variations and fugues of Bach [14]. The movie also attracts the attention with the variety of different styles used in short films and unconventional placement of them in the structure. The connection between the personality of Glenn Gould and the narrative structure of the film is one of the most exclusive point of the movie. Even changing the rhythm of the gameplay in line with the main character can be used to implement the narrative into the game without causing any interruption.

The narrative structures of the three movies and the trilogy mentioned above are outside the accustomed fashion. However, when it comes to Cinema, how you tell the story is not restricted with the plot. A movie consists visuals and audial elements. The camera angles, frame, visual effects, sounds, conversations and music are all narrative elements in movies. Considering these facts, besides the movies which are important with their narrative structure we also analyzed a movie using the narrative elements in an unexpected way. Baraka [9] is one of the movies which can be an example for this kind.

Baraka, originally being a documentary, centers its subject among culture, religion and nature. Unlike the mainstream documentaries, Baraka does not use voice-over narration. Therefore, the burden of the narration is on the shoulders of visual representation and music. Baraka tells its story with the composition of visual elements and the music accompanying it. The placements of the scenes are planned carefully to express the messages correctly. “Traffic Chaos” chapter is an obvious example showing the carefully ordered sequences in that manner. In this scene, while flow pattern of the heavy traffic in the city is shown, imagery from a chicken factory interrupts the scene at intervals. Concurrently the people walking in crowds as if they are directed by someone are presented. When all this composition is blended with a rhythmic tribal song playing in the background, the scene lasting 9 minutes is watched in an instance in spite of the repetitive actions existing in the scene. These 9 minutes is very successful in showing that how the lives of the people in a city are performed in a routine as if they are products in a factory band. Baraka shows that, with a right composition of imagery accompanied with music, a strong narrative can be transmitted. Compositions of these kinds can be ideal for storytelling in iterative sequences of gameplay.

3 . Guideline

Above, 4 single movies and a trilogy utilizing different narrative structures and techniques are examined. As a result of examination we come up with 8 guidelines as stated below:

1. Different Point of Views: Showing same events from the different point of views or from the eyes of different characters can be used for creating links between chapters and sequences. Some games make available to play the game with different characters. Even, these characters can be controlled simultaneously. Moreo-
ver, trilogies and series are quite common in the game industry. This guideline can be a clue for creating link between different games comprising series or different sequences which can be played with different game characters. This kind of approach for linking different scenes to each other would be a genuine way in digital games. For example, Diablo III [15] is a game which can be played with different kinds of characters making available different stories in every play session with different character. An environment like in Fig. 5, can be visited more than one time in different play sessions with different characters. A basic example for this guideline can be applied by placing a previously played character and make him/her act according to the previous gameplay session, while the player is visiting the same environment with a different character in another gameplay session.

2. Short Stories: If there are chapters in the game, whose stories are completely different than each other, the connection between them could be created with the use of short stories which have indirect relation with the main flow while having an obvious connection with each other. This method could also be an authentic approach in digital games for bonding the different sequences of the game. These short stories can be differentiated even with the animation and art styles used and may aim to tell a story during the gameplay sequences.

3. Unconscious Choices: The effect of the user to the story could be built on unconscious choices instead of conscious choices. Especially in games, the player is allowed to manipulate the story with the choices he made. However, this choices are usually the conscious ones. The reflexive moments, where the player should dodge an attack or jump from an edge have usually effects only on gameplay. Instead failures in reflexive actions may lead other story pieces. These may also end up with different game mechanics which requires different expression and animation styles.

Different Domains: By the implementation of different domains in the game play sequences, the narrative can be administered without causing any interruption in gameplay. The method also useful for breaking routines. Similar methods have been used in digital games. For example: In GTA4, it is possible to play retro Arcادegames in game machines. However, since the game
machines are the part of the world created in GTA4 [16], it is not exactly the same. One of the closest examples can be the Batman: Arkham Asylum [17]. In one part of the game, although the main genre of the game is "Third Person Action", the game turns into a 2d platformer.

4. Fig. 7). The transition is not sharp as it is in "Run Lola Run", however it is an authentic transition between two different game genres. Yet, it does not have any effect on narrative of the game. The method can be extended for telling stories during the gameplay.

5. Symbolic Visual Cues: To represent the different states which are created by different choices of player and have the possibility of being confused, could be overcome by using symbolic visual cues. In games where the story is led more than one branches, similar methods can be used to express distinction between storylines. These methods can be especially applied to the animated characters in game play. By using different animation styles on the same character, differences as indicated can be provided throughout the game play.

6. Unconventional Imagery: Narrative can be implemented into the repetitive sequences of the game play by using unconventional imagery and composition which can be balanced by making them fit the rhythm of the game music. As mentioned, one of the main problems of narrative in games that they are not integrated into the playing sequences and the use of cut scenes interrupts the gameplay. Narrative elements comprising unconventional imagery with a composition suiting the rhythm of the music can represent the story during the gameplay. The animations of the characters, objects and effects should be in synchronization with the rhythm. Rhythmic animations combined with narrative objects which can be placed to the screen as result of interaction of the user may provide a narrative without interruption.

7. Personalities of Game Characters: Spiritual states and personalities of the game characters, which are abstract concepts, can be related with the narrative structure and used techniques. For instance, if the story is built upon a character having a manic depressive disorder, narrative can be transmitted by composing game levels with sharp changes in rhythm.

8. Compositions Delivering Messages: The iterative actions can turn into strong narratives by composing the scenes in an order which can constitute a story. By showing obvious similarities between different cases sequentially, these kinds of messages can be generated without voice-over narrations. By creating similar compositions during the game play sequences, it may be possible to tell stories during play sequences without the need of a narrator. Simply, an example for this kind of situation can be given as two different animated characters can act in two different, nevertheless visually similar areas. The kind of composition can provide a narrative about similarities between two domains.

If the similarities in the environment are enhanced with animated objects, this will also alter the rhythm and break the monotonous atmosphere of the levels and iterative actions.

4. Conclusion
In this paper, we analyzed seven movies whose narrative structures are appropriate for interactive narrative to reach guidelines which can be used in interactive stories of digital games.

As a result of our studies, we are able to extract principles of “different point of views”, “short stories”, “unconscious choices”, “different domains”, “symbolic visual cues”, “unconventional imagery”, “personalities of game characters” and “compositions giving messages” which can be considered guidelines. These guidelines hold potential to be used for enhancing the narrative experience in digital games. The games are considered inappropriate for storytelling because of their iterative nature [1]. However, guidelines in the paper referring to the iterative actions promise solutions for telling stories during the gameplay sequences without causing any interruption. Although the used methods and compositions are designed to be suitable for the movies, further researches should be conducted to understand the ways for applying these guidelines on games.

Other than the iterative actions, guidelines we created give also clues about creating links between events and characters in the branched stories. Especially, using the “certain symbols to express the distinctive story lines”, “showing same events from the eyes of different characters”, “integrating short stories progressing along different chapters” are quite clear guidelines to apply. Moreover, instead of conscious choices of the player affect the
story, the ways of making the “successions or failures”, which are the results of unconscious choices, affect the story progress should be studied on.

Relating the narrative structure and the game character’s personality is a complex process. However this kind of relation holds potential for turning game play sequences into narratives. Composing the levels or the rhythm of the game affiliated with main character’s personality or spiritual state can be an authentic method for games to tell stories.

The result of our study shows that, still more principles can be established by analyzing movies having non-linear structures. To obtain more guidelines which can be inspirations for directors of interactive narrative, further researches should be done by analyzing more movies. Even this short analysis proves that, the game designers can still borrow from cinematographic representation techniques for enhancing the narrative in games.

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Illustration and animation in theatre for children

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Abstract
In Valencia, in 2010, was performed for the first time the children’s play Consonant, by the Valencian theatre company Maduixa. It is a multidisciplinary project that combines dance, theatre, illustration and animation.

The play making also counted on a team proceeding from different areas, leaded by Juan Pablo Mendiola. Choreographers, illustrators, designers and animators started one teamwork creation that produced as a result one play addressed to children’s audience, that has been performed at different theatres in Spain and France.

This team is currently working on the creation of another play called Dot, that will be first shown in Valencia next November. Even though theatre has been accompanied by projection and cinematographic tricks since the first optical inventions, the present moment offers a very profitable scene for multiskill work pointed to show creation, that allows to research into the possibilities of interaction between body and animation. Thus, animation escapes from its tradicional nature, looking for new creative goals, broadening its repertoire and discovering new platforms and media for its live enjoyment.

This text will let us go into the creation and staging processes of a theatrical play, in which choreographic work, drama building and animation are intimately related and mutually reinforce each other.

Besides, some technical questions that should be taken into account to deal with this kind of work, will be revealed.

Keywords
theatre, animation, audiovisual scenography, motion graphics, performance

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1. Introduction

In 1914 Windsor McCay jumped from the comic pages to the screen with Gertie the Dinosaur. This is one of the first movies fully conceived with drawing to drawing animation techniques. This proposal possessed some very special features that positioned this movie as an unavoidable international example. At these beginnings, animation and show were intimately linked. McCay himself, as many other cartoonists, took part in some small vaudevilles called chalk talk, where the audience could listen to their discourses while enjoying their live drawing. On February 8 that same year, McCay himself introduced his play at the Chicago Theatre Palace.

He was wearing a smoking and held a whip in his hand. The screen was only showing a rock landscape picture. After the order ‘Gertie will come out of that cave and do everything I tell her to do’, a shy female diplodocus appeared in scene and started to comply with McCay’s orders.

After the order ‘Be a good girl and bow to the audience’, the animal took a bow in front of the public. Later, before Gertie’s refusal to obey her tamer orders of alternative raising her right and left paw, McCay started to tell her off, and, ashamed, she started crying. She was the first cartoon character that showed her feelings and personality.

This was followed by a string of interactions held between the real and imaginary characters.

McCay even offered to the dinosaur a fruit that became three-dimensional in the screen. Finally, McCay himself disappeared from reality to enter fiction.

The quality of the cartoon character animation was undeniable. Besides, her creator had contributed to the animation process with some techniques that would be followed by many in the future.

But the main contribution of McCay with this vaudeville was creating, without noticing it, the first interactive play.

Winsor McCay was facing an art that was still unaware of its potential, and he did it without complexes or prejudices, with an instinctive ludic sense, showing the most performative part, the essence of animation in a live show.

But if McCay’s contribution regarding to cartoon animation was extraordinarily developed by cartoonists who succeeded him, his performative side fell into oblivion. Very few have worked in real time and in body relationship animation.

The cartoonist experiment expected to overstep the physical limits of the screen and, at the same time, the intangible boundary between fiction and reality, an extrasensory experiment that only got its thoroughful meaning on stage, at the moment of the acting.

The seed of this technique planted by McCay one hundred years ago, is now picked up by cinema and media for offering to the public some new ways to experiment the cinema show. Now it has been improved with 3D and corporeal perceptions, achieved by stereoscopy and by the contributions of the ludic videogame industry. Both of them follow the trend of melting the boundaries between fiction and reality, and also transcending the screen limits.

Both cinema and videogames take McCay’s baton, but what about that performative experience that allowed the projected image to interact with a human being? Both theatre, shyly, and performance, in an enthusiastic way, will follow the steps set by this multifaceted cartoonist, exploring the mentioned limits and creating scenic suggestions as original and creative as transgressive.

Cinema has remained linked to theatre since its origins, through the mentioned optic tricks and projection techniques. In fact, one the cinema’s fathers, Melies, built all his cinematographic delirium around theatre show. This old and tight relationship has indeed enriched both disciplines.

Some tricks like the Magic Lantern or Pepper’s Ghost were filling the late 19 and early 20 century scenes, astonishing the audience, but also sequential image had rushed into the theatre by the hand of Meyerhold, Picator or Burian, all of them inspired by the avant-garde ideology and spirit.

Later, the czech Sloboda excelled in theatre staging, proposing esthetic and narrative solutions related to space, movement, time or light. Systems like polivision or poliecran will be a revolution in the 50-60’s theatre, in productions like Magic Circus.

Many of the current scenic designs count on audiovisual re-
sources that contribute to enrich the play-writing and offer to the public new extrasensory experiences. The animation technique allows plenty of possibilities if the targeted audience are children.

During the first months of 2011, Maduixa Teatre convened a multiskilled team of professionals, choreographers, illustrators, cartoonists, dancers and producers who started working in the creation of a children’s play, under Juan Pablo Mendiola’s direction. Three months later took place the premiere of Consonant, performed by two dancers and actresses who entered the world of books through the magic of animation.

Among the projects for animation shows, even those targeted to an adult audience, outstands the work of Neil Coppen (actor, writer, director and designer in Durban, South Africa), particularly for the piece Tree Boy.

Set in 1960s South Africa, this show tells the story of Ben, an eleven-year-old boy whose mother dies. His father, unable to cope with the loss, starts drinking. Father and son move from a farming area to an industrial town, and hope is born again through the example of the life cycle of trees. The show is a mixture of real action and projected animation, between the reality and fantasy of Ben, who seeks solace in an over-grown forest. Real and animated shadows are mixed to show the different levels from reality to imaginary world.

We can find other good examples in the work of Between the Devil and the Deep Blue Sea, the 1927 awarded english theatre company. His acclaimed recent work The Animals and Children took to the Streets, is the staging of a tale of urban squalor, backed by live piano. It tells the story of the anarchic slum children invasion of the respectable parks and gardens of the well-to-do, demanding a decent living and education. The proposal is a mixture of animation and white-face melodramatic acting. Graphically, the show is inspired in Rodchenko’s paintings and collages.

A different sample of performed animation, the work of Miwa Matreyek shows live film projection and performance in pieces like Dreaming of Lucid Living, Myth and Infrastructure or her last work This world made itself. Matreyek was a student of an Experimental Animation Program from Call Arts, within which she developed Dreaming of Lucid Living. In this solo performance she is the actress in her own performed animations. Her shadows interact with the animation, which connects with her own graphic universe. Her works blend different techniques of projection, from mono-projections to videomapping.

Regarding to performed animation for music projects, we could point out the interesting work of Claude Grosch who created Anna Angel, a part of the Philharmonic Luxembourg and TrafFik Theater Luxembourg joint project called Musek erzielt. This programme approaches classical music to a young audience through theatre and storytelling. In this project Grosch animated his own illustrations, attaching them to the flow of the narration and music.

The last representative example in theatre for children comes from the Chicago Children’s Theatre’s in association with Redmoon, who worked together for the project called The Elephant and the Whale. Performing sea voyages fables, this show not only contains animation, but also wild mechanical objects, circus songs, panoramic paintings, shadows and puppets.

After these examples of contemporary theater and performance, in which animation plays a leading role, we are describing in detail below the children targeted show called Consonant.

2. The play and the company.

Under Joan Santacreu’s direction, Maduixa Teatre started its artistic career path in 2004 in Sueca (Valencia), offering street and indoors performances for the general public. In 2006 came the professionalization with the show Maniatics, which provided the sector’s recognition, leading the group to settle as a company in 2008.

With the intention of growing and working new disciplines, the company strengthened its main values: combining theatre, dance, plastic arts, new media, a careful staging and a solid performance.

A resolute investment in this research work consolidated the group, defining its own language. The fruit of this multiskill work definitely launched the company with the play Ras, that participated in most of the festivals in
Spain, France, Italy and Norway, and toured significantly across France.

Maintaining this interdisciplinary work line, they decide to turn visual, choreographic and plastic languages into a new expression vehicle for children in their new production, Consonant, in 2011. However, the company takes charge of some extra activities coming from the theatre’s sphere, like the organization of the Muestra Internacional de Mim which takes place in Sueca (Valencia) since 1989.

Consonant is Paula favourite’s book. Aina, her younger sister, will discover to her elder sister’s eyes that this book holds wonderful episodes starred by letters, an imagination universe that will lead them to trip full of adventure.

Consonant is a show in which dance, theatre, plastic arts and animation will carry us to a visual poertyr world, feeding on Paula and Aina’s imagination. Poet Joan Brossa’s imaginary world is the referent of this play, where the turning of letters into objects, magic and word-playing are the real satarrings. The play was awarded with FETEN prize in 2011.

3. Staging

Some technical, narrative and esthetic considerations have to be defined before starting one audiovisual design project intended for a show. By means of previous meetings, all the technical and artistic staff should be informed of all these questions. Designers and cartoonists should gather as much information as possible. All the features concerning to projector and screen distribution on stage, as well as drama questions, are crucial for the designer and cartoonist work.

Projection

In theatre, there are different projection techniques, depending on the projectors and the resultant image locations. Besides, technique may vary depending on the nature of the projection surface, the screen.

In general, is possible to project from the central part of the stage (front projection). If the projector is located at the back of the stage, it would be called a back projection. The screen is usually a smooth surface, built with fabric tightened over a frame, removable in order to assemble it easily. Occasionally it can be a volumetric surface, shaped in a simple geometry whose faces are mapped through the projection. This technique is called videomapping.

We will not go deeper in this matter since it would require an extensive development.

The screen can be made of fabric. Depending on its density and the projection technique, different effects will be achieved. If it is opaque, the space will be completely limited by it, avoiding that anything located behind it can be seen. However, if the fabric is transparent, like scrim, it will be possible to suggest a sensation of two spaces completely different, by means of lighting and projection. In this case, if light comes exclusively from the front, the screen will be opaque from the audience. However, if it is lighted from the back and the characters are behind it, we will have a transparency effect, particularly suitable for unreal or magic scenes. The game between both spaces will provide effects with plenty of possibilities for the staging. As well as these two kind of scrim or opaque fabrics, one translucent fabric could be used when back projection is required.

The actors location also contributes to create different effects. If they are in front of the screen, the projection can fall on their bodies.

However, since they would also project their own shadows onto the screen surface, the magic trick would be discovered. Designer and director’s expertise is required to avoid this unwanted effect, contributing to make plausible the magic of theatre. If the screen is opaque, they can also place themselves behind it, although they could only be seen through a back light, then. This would also project their own shadows onto the screen, happening the interaction, in this case, between those shadows and the projection.

Locating the actors behind a transparent screen will achieve an effect of perfect immersion of their figures into the image. To obtain the isolation of any of the projected figures, an absolute black has to be achieved through an opaque black surface covering the bottom of the scene (usually fabric).

In this case, the screen shouldn’t be lighted up by any additional source, not even the residual light that projectors produce.
and only allows to get a dark gray.

For Consonant was chosen the back projection technique.

Two vertical opaque screens, one metre separated, were on stage. Both of them were made of a fabric specially suitable for back projection and white coloured, which grants the maximum reflection of light.

The actresses interacted with the animated objects through their own shadows, obtained by means of a projector placed behind the screens.

**Technical design and workflow**

There are not provided standards for a play’s technical confection and workflow.

Each staging will handle some determined requests, and will require different design adaptation to the sought-after kind of stage, theatre, screen or projection. Also animation and roaming will affect this design. Other issues like the audience’s location in the amphitheater will affect the play’s field of vision. Also the software used to launch a real-time video, or even budget, are factors that intervene in the technical design of the show.

The workflow, that must be well-known by designers, cartoonists and technical staff is designed considering all these parameters. As we have mentioned before, back projection was used for Consonant. The scenography was very simple. On stage there were only two big screens (3 x 2.25 m), a box and a rocker built with a letter D. The vertical screens had a same proportion as the available projectors resolution (768 x 1024px), in a 1.33 ratio. Projectors were placed in vertical, behind the screens.

The use of back projection meant that the stage required a space behind the screens. This area came defined by the projector’s focal distance, which was 8 mm.

To calculate the projector’s location, the longest distance, fixed in 3 metres had to be multiplied by the mentioned focal distance, resulting in 2.6 metres in horizontal.

**Animation, synchronization and final image**

The actors work took place in a stage fitted for that purpose, the set. When the choreography of each act was over, a video was recorded and sent to the animators. The dancers made a blind work, since they couldn’t see the objects they were interacting with.

The videos provided the animators with the location of the objects that were adjusted to the dancers movements. Once the piece was finished, the animators sent the result, from which the dancers adjusted again their movements for a perfect synchronization.

Although the complete work offers a perfect interaction result, the work methods adjusted by hand the animation to spatial and temporal location of music and movement.
This picture was sent to the projector, which, by means of the software Qlab, distributed the images to both projectors (creo que aquí querías decir pantallas: screens), and, since it was a back projection, also mirrored the image. As we mentioned before, technical design and workflow are specific for each production. Technicians and animators can advise the direction team, but eventually is the stage director who will set the definite standards for the design. The animator is an intermediate link in this assembly chain that should be well defined, not only in what concerns to workflow but also to timing.

4. Esthetic and narrative adaptation to drama
Once the work process is clear, design and animation teams start to work on the choreographic work already done. This is not really an enclosed work, but instead a work in progress, in which mutual influences are continuous.

It’s very recommendable the presence of the animation team at the rehearsals, in order to provide technical and esthetic solutions and take note of what is happening there. Synergy must flow between teams. Animation and theatre worlds are mutually alien, and is advisable to be close to the props to understand theatre’s ins and outs.

Unlike the animation strictly speaking, in which elements and animated characters are the focus, theatrical animation has its own corporeal characters who bear the burden of interpretation and need enough anticipation and reaction times. Animation completes these actions, so, even counting on a video support, the animator works lacking of full information of what is happening onstage. Because of this, the presence of the animator in rehearsals is essential.

After going through many theories developed by specialists in stage direction, the use of audiovisuals in theatre can handle different purposes since the narrative point of view, by building spatial, temporal, or even emotional identities of the play. According to Saltz (2011), these functions or relationships between scenic arts and audiovisual media can be divided into:

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
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<tbody>
<tr>
<td>Virtual scenery</td>
<td>The media provide a backdrop depicting the environment within which the staged action takes place.</td>
</tr>
<tr>
<td>Interactive costumes</td>
<td>Interactive costumes use the body of the live performer as a canvas for the media.</td>
</tr>
<tr>
<td>Alternate perspective</td>
<td>The media depict the events enacted onstage from another visual perspective.</td>
</tr>
<tr>
<td>Subjective Perspective</td>
<td>The media depict the thoughts, fantasies, dreams, or sensations of some or all of the characters onstage. Illustration. The media illustrate the performer’s words.</td>
</tr>
<tr>
<td>Commentary</td>
<td>The media have a dialectical relationship with the stage action or serve as epic commentary on it.</td>
</tr>
<tr>
<td>Diegetic Media</td>
<td>Diegetic media exist as media within the world of the narrative—when, for example, a character onstage turns on a radio or television set.</td>
</tr>
<tr>
<td>Affective Media</td>
<td>The media produce an emotional effect on an audience.</td>
</tr>
<tr>
<td>Synesthesia</td>
<td></td>
</tr>
<tr>
<td>Instrumental Media</td>
<td>Interactive technology is used to create new kinds of instruments.</td>
</tr>
<tr>
<td>Virtual Puppetry</td>
<td>The media create a performer’s double.</td>
</tr>
<tr>
<td>Dramatic Media</td>
<td>This type of media representation functions dramatically by interacting with the performers as a character in the narrative.</td>
</tr>
</tbody>
</table>
Besides, according to the taxonomy suggested by Iglesias (2008), the projected or emitted pictures establish three primary links with the happenings onstage: one harmonious relationship that builds a significant continuity, one relationship of opposition between pictures and performance, seeking for new meaning and expressive horizons, and a supplementary relationship that provides additional information.

Theatre for children should not use very complex relationships, since the age range goes from 3 to 6 year old, and children of this age cannot simultaneously focus on many issues. It is advisable to emphasize the action and make clear the main developed ideas, there is no need to use profound and complicated performances, but rather simple and catchy solutions.

In Consonant’s drama, there were two well differentiated parts that affected the use of the stage area.

On the one hand, the real space, fruit of the personality of Paula, the elder sister, reasonable and responsible. On the other hand, the space resulting of the adventurer and fantastic spirit of Aina, the younger, marked by her imagination and creativity. On stage, these two spaces corresponded to the areas in front and behind the screens, respectively.

In Consonant, therefore, animation clearly represents Aina’s imaginary world, where wonderful things, impossible in a real context, do happen, touching finally also Paula. This would be the so called subjective perspective (Saltz), although it also had the function of illustration, affective media, synesthesia and dramatic media.

Besides, although Saltz does not remark it, strategies of temporal compression were done within the audiovisual project, in which ones the characters passed from one episode to the next in a time shorter than the given in the story. Investing in simplicity for the children audience is not incompatible with a careful staging.

**Illustration**
The conceptual protagonists for Consonant were the consonants and for plotting we worked arround visual poetry. One of the key references was the work of Joan Brossa (1919-1998), Spanish poet who submitted the text and image to a delicious democracy in which they shared their prominence in equal and whose raison d’être is based on the existence of other. His works are characterized by simplicity and sobriety, while for the humor, sarcasm and irony, Brossa as their predecessors Apollinaire and Mallarmé or some of his contemporaries as Massin explore the hidden parts of the letters raising games between them and looking attractive and stimulating semantic twists with reading levels much deeper. In Consonant this game between letter and picture was essential to build a fantastic universe around the Paula and Aina.

The first thing to design was an alphabet, although Roman typeface was based on trying to escape from the rigidity of the original design looking irregularity in both the stroke and as the combination of upper case characters and lower case, these latter were enlarged to match the visual weight of the case.

Also freehand stroke helped to create a more casual look. Each of the episodes for Consonant was developed graphically around the letter, creating ideograms aimed to broadening the proper meaning of each letter and encourage children’s learning. For example the “Y” Greek form weew the branches of a tree whose fruits were “Q”, or a capital “D” would become a water bowl and an “R” at the faucet fills.

The animators worked with the illustrator’s drawings Patricia Barrachina, who was, at the same time, in a continuous connection with the stage director. These handmade drawings were scanned and separated into layers in order to make the animation easier.

**Animation**
All animation work was created digitally from the drawings provided by the illustrator. The movement of the objects were reaction causes or actions that run the protagonists to bring that sense of interactivity. The movements recreated in Consonant
were related to natural phenomena such as wind, water or gravity, formation or disappearance of objects, metamorphosis, embodiment and simply spatial recreations.

Natural phenomena were developed in a more or less naturalistic form according to the scene, there were leaves falling from the trees or were swept by wind, water that filled objects or fell of them, also soap bubbles or seeds that were scattered throughout the actresses, all represented by typography. In the forest scene, vegetable growths were recreated in the trees formed by “Y” and “Q”.

We used metamorphosis animations such letters transformed in dresses. The embodiment, process that gives life character to something inanimate, was recreated in diferent parts of the show as an “M” with wings, a snail or a spider.

Finally the animation was also used to pass quickly switch spaces to others through transitions, like bedroom to bathroom, to a kitchen or to a landscape.

The animation was two-dimensional, although some objects moved in depth.

4. Conclusions

Scenic arts provide a new sphere for animated experimentation. In theatre and performative arts, the students and professionals can find new platforms to take advantage of the interaction possibilities between the animated pictures and words or dance, and also other resources like recorded or archive pictures.

Through digital or manual techniques, the animators put their creations at the disposal of the drama, in a space where image and body languages come together.

The main problem of this kind of shows could be the tight budgets, maybe.

But also the short deadlines must be remarked, since they sometimes lead directors to stage shows in barely two or three months production periods.

The occasional lack of interconnection between theatre and animation worlds has to be also taken into account, although more interdisciplinary teams are being created and carrying out joint projects progressively.

Both disciplines processes are very diferent, so the animator not only should make an inmersion work to understand theatre techniques, but also an effort to make his work understandable through the word and also through other resources like story boards and animatics.

Besides, these kind of work also suggest a new gaze on theatre, whose contemplation and enjoyment finds its full meaning in the real time, in the live show.

A sensory experience that surpasses the traditional filmic resources offering a kind of product much more close and energetic. Not in vain, unlike the cinema spectators, theatre audience is more active and predisposed to this kind of scenographic magic.

This other way to make animation, conceived as a global show, means to dig up Winsor McCay’s forgotten legacy. Almost a childish wish of bringing to reality what happens in our imagination. So to speak, to turn into reality our deepest wishes, to transform what surround us searching for a better world. And all that, thanks to animation.

Cast:
Performers: Aina Gimeno y Paula García Sabío
Playwriting and director: Juan Pablo Mendiola
Choreographic director: Mamen García
Music: Paco Garnelo
Violin: Lucas Granell
Original music: Paco Garnelo
Lighting and audiovisual designer: Juan Pablo Mendiola
Illustrator: Patricia Barrachina – Patossa
Graphic animators: Beatriz Herráiz, David Martínez y Hector Ferrández
Costume designer: Pascual Peris
Staging space: Joan Santacreu i Juan Pablo Mendiola
Stage director: Marcos Orbegozo
Graphic designer: Joan Santacreu
Photography: Jordi Pla
Video: Nirvana Imatge
Distribution: Loles Peris
Production assistants: Vanesa Abad, Anabel Calderón, Inma Melero
Executive producer: Joan Santacreu

**Bibliography**


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